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H. G. HAWKER
AIRMAN:
HIS LIFE AND WORK

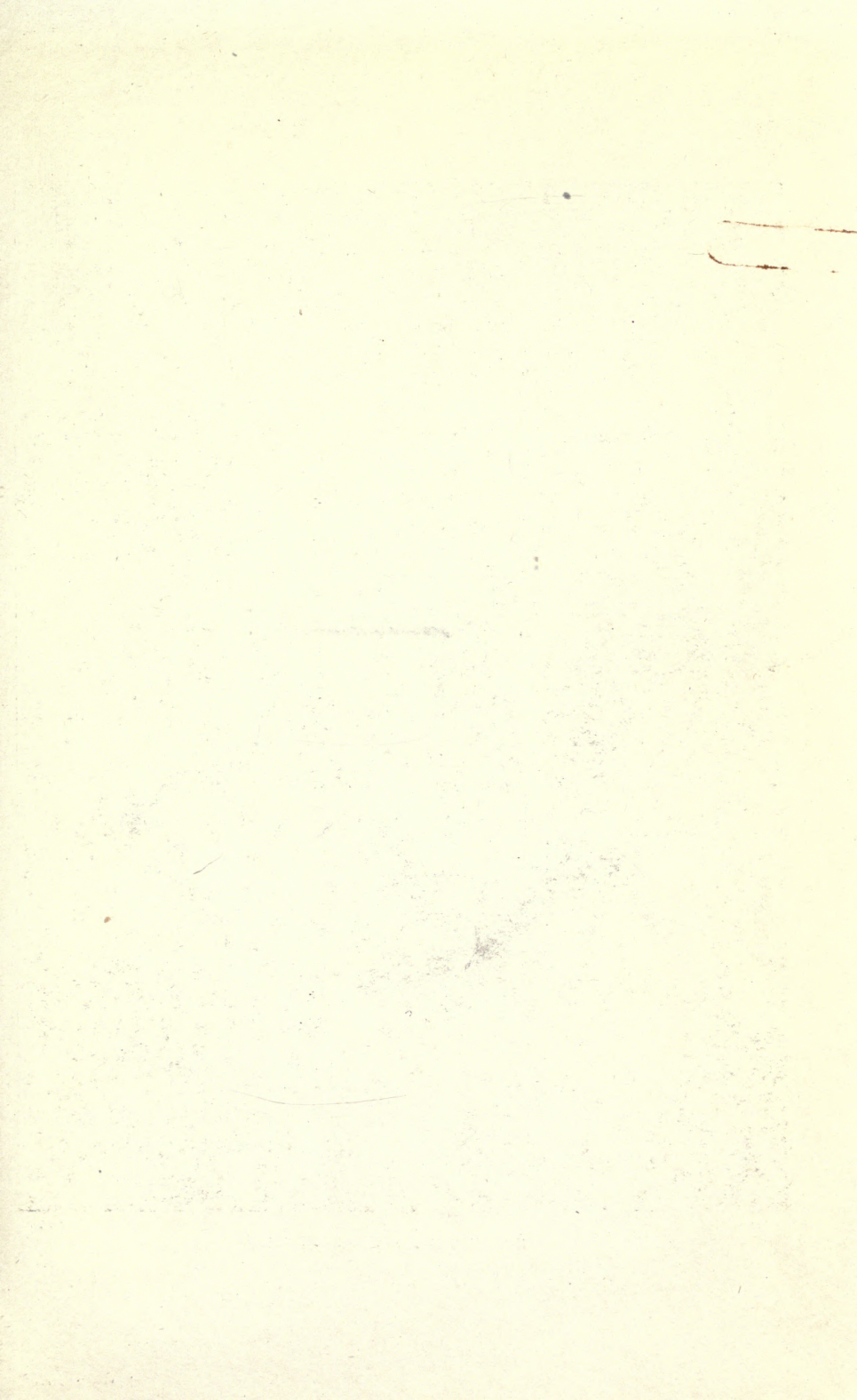




Photo by

HARRY GEORGE HAWKER, A.F.C.

[Swaine.]

[Frontispiece.]

H. G. HAWKER, AIRMAN: HIS LIFE AND WORK

By

MURIEL HAWKER

)

WITH A FOREWORD BY

Lt.-Col. J. T. C. MOORE-BRABAZON, M.C., M.P.

WITH FRONTISPIECE AND 24 ILLUSTRATIONS

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FOREWORD

By LT.-COL. J. T. C. MOORE-BRABAZON, M.C., M.P.

I HAVE been shown the great honour by Mrs. Hawker of being asked to write a Foreword to this book about her late husband. I can do nothing better than give the advice to all to read it, because, if they have followed aviation for some time back, they will live over again that heroic epoch when flight was really being made possible and will appreciate some of the difficulties and many of the successes that make the early days of aviation such a fascinating story ; and if, on the other hand, they have only taken an interest in aviation lately, they will get conveyed to them from this book the atmosphere that pervaded the little community of enthusiasts who existed in the early days.

The figure of Hawker looms up large in the early days of aviation, and such was the man, that even after the war, with the hundreds of thousands of people that came into the movement, he still stood out a noteworthy figure.

His name will go down for all time coupled with others who gave their lives for the cause, such as Rolls, Grace, Cody.

It does indeed show a singular change in the mentality of the nation that the most popular sporting figures of recent times have been men whose prowess has been associated with their domination over machinery rather than animals. The bicycle was the instrument that first compelled the attention of all to a knowledge of mechanics, the motor-car demanded further knowledge on the subject, but it was not until the advent of the aeroplane that the imagination of the youth of this country was fired to appreciate the necessity for knowledge of mechanics.

Hawker, thirty years ago, was an impossibility, but when he died he was the idealised sportsman of the youth of the country, and it was rightly so. Modest in triumph, hard-working, a tremendous "sticker," yet possessed of that vision without which no man can succeed, he stands out a figure whose loss we mourn even to-day, but whose life and career will serve as an example for others to attempt to follow.

J. T. C. MOORE-BRABAZON.

July 4, 1922.

PREFACE

WITH his words still fresh in my memory, that, should anything ever happen to him, the one thing to do was to get work which would occupy my mind, I took upon myself the task of writing my husband's life. I have been encouraged by many letters from people suggesting my undertaking this work, and, thus encouraged, I present this book.

I make no apologies for the errors of style, the technicalities of which I know nothing, but I have tried in simple language to convey some idea of the great work and spirit of one who attempted much, and, although crowned by few successes, was never for one moment discouraged as a loser.

I leave others to judge the merits of his works, but I leave to no one but myself the disclosure of the real goodness of his nature. This book being, more or less, a record of his achievements, it has been difficult to convey any idea of his true worth, which did not stand in anything he did, but in the firmness with which he held to what he considered was right. This sense of honour, not cultivated but innate, kept the fame, which he earned, from detracting in any way from the integrity of his character, and he always remained to the end his cheery, unaffected self.

His buoyant nature did not admit of defeat. I have never seen him disheartened and never has he given in. He always did his very best, and was ever ready to try again when that best was not good enough.

At the height of his popularity he declined good financial offers for lecturing tours in England and the States, which would have kept him for the rest of his life. Money could not divert him from his calling.

His goodness of heart would never let him turn away anyone in distress, and, in this, lack of discrimination played a big part.

Many people came to the house after his attempt to fly the Atlantic, with pitiful tales of woe. One, a musician, who said he had fallen on bad times, wanted a loan of £10, stating that he was a member of the Queen's Hall Orchestra, in which he played a mandoline. He got his £10, but I do not believe the mandoline has ever figured amongst the instruments in the Queen's Hall Orchestra.

A few days later another musician, very probably a friend of the first, arrived, but Harry said he would not see him. However, he was so persistent that Harry saw him at last, and heard his tale, which was to the effect that unless he could get a certain sum of money he would be sold up the next day, and, rather than that, he intended taking his life that night, although he had a wife and child. With tears, he asked if his life was not worth the few pounds, which he would surely return within a month. He received his cheque, left some of his own compositions for me to try, which he said he would call for when he repaid his debt, and was never seen again.

It would seem that Harry's perfections have been exploited and his imperfections ignored, but I find the first so easy, my pen willingly covering many pages, and the second, not irksome, since his very imperfections were interesting, but hard to define.

Before our marriage he warned me of his terrible temper, which, he said, appeared at intervals, making him for a short time an unapproachable individual, and advised me that on such occasions I should leave him completely alone. I never witnessed one of these outbreaks and doubt if they ever occurred. Fits of irritability would seize him, sometimes for little or no apparent cause, and at others under great provocation, and while they lasted he was a very trying companion. But he would not be irritated for long; and these, I think, must have been his fits of terrible temper.

If neglect of his financial responsibilities, through disinterestedness, was a fault, then he had a big one. He was as unmercenary

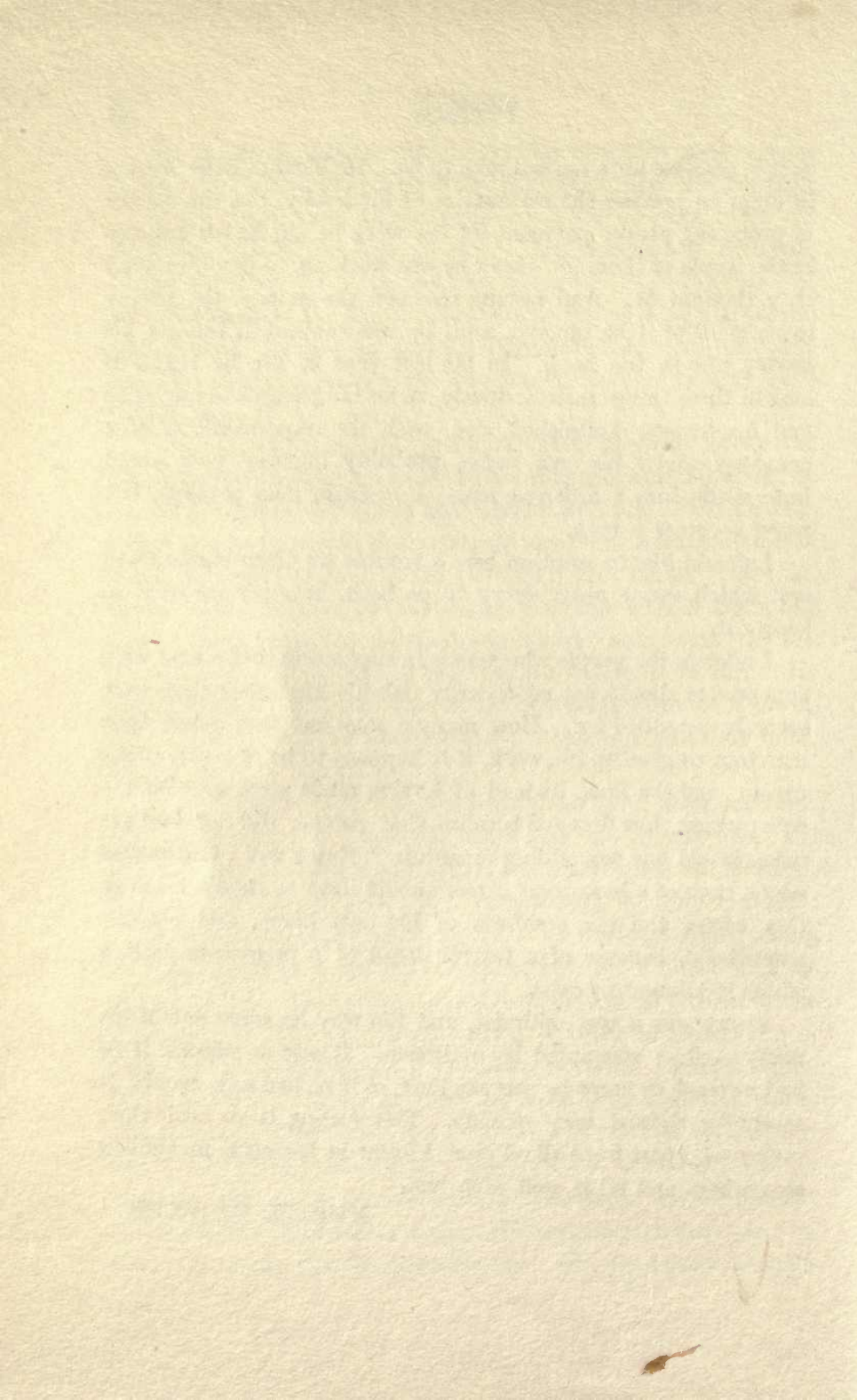
as it is possible for a normal man to be. He liked to have money in order to procure the necessities of his hobby, but the matter of procuring proper payment for the work he did he left entirely in the hands of those for whom he was working, to pay him what they thought fit. And having received the money, the proper investment of it he ignored, until he was reminded, leaving his money idle in the bank. In his last year of life he began to look at these things more seriously, as his outgoings had increased and his income diminished, and, with the responsibilities of a company under his own name, probably another year would have made him a different man—a business man perhaps, but never so great a man.

I should like to mention here a trouble we often encountered and which was a great worry to us both, however we tried to ignore it.

I refer to the people who persist in suggesting that a man with dependants should not continually risk his life unless they were securely provided for. How many a man has been asked upon marriage to give up his work, if it happens to be of a precarious nature, and the firm, instead of having made progress with the new partner, has decayed because that partner did not face the risks the old one was willing to sustain? Never will I understand why a man of a hazardous career should have to choose between that career and the comforts of his own home, and possible parenthood, because of a fearful dread of a premature parting which is allowed to exist.

Harry was a true optimist, and the way he came out of his many troubles warranted his optimism. It was so natural if he had a smash to know he was not hurt, or if he had any trouble it would be righted very quickly. This feeling is so real that, even now, apart from all religion, I know he has come up smiling somewhere and all is well with him.

MURIEL HAWKER.



PREFATORY NOTE

(POST SCRIPTUM)

THE production of this book has necessitated the collecting and sifting of a considerable amount of detail, particularly as regards the earlier chapters and those dealing with the Atlantic flight. In this and in the general plan of the book I have received considerable assistance from Mr. W. R. Douglas Shaw, F.R.S.A., who has rendered invaluable help in many ways through his wide knowledge of aeronautical matters.

This introduction would not be complete without my also acknowledging the help received from Lt.-Commander Mackenzie Grieve, R.N., who has kindly read through the chapters dealing with the Atlantic flight ; from Mr. Alan R. Fenn, formerly of the Sopwith Aviation Company, for details of Harry's experiences at Villacoublay ; from the authorities at Australia House in allowing me to consult their records, and from many others who have contributed in various ways to this work.

My acknowledgments are also due to the Press, on whose reports I have relied in many cases, and I would mention *The Times*, *Morning Post*, *The Daily Mail*, Temple Press, Iliffe & Sons, *Flight*, *The Aeroplane*, and particularly the kindness of the proprietors of the *Melbourne Argus* and *Sydney Bulletin* in giving me free access to their files of 1913-14.

MURIEL HAWKER.

May, 1922.

THE HISTORY OF THE
CITY OF BOSTON

The history of the city of Boston is a subject of great interest and importance. It is a city of many centuries, and its history is full of interesting events. The city was founded in 1630, and since that time it has grown to be one of the largest and most important cities in the world. It has been the seat of many great events, and it has played a prominent part in the history of the United States. The city has been the home of many great men, and it has been the birthplace of many great ideas. It has been the center of many great movements, and it has been the source of many great influences. The history of the city of Boston is a story of growth and progress, of struggle and triumph, of hope and despair. It is a story that is full of interest and importance, and it is a story that is worth knowing.

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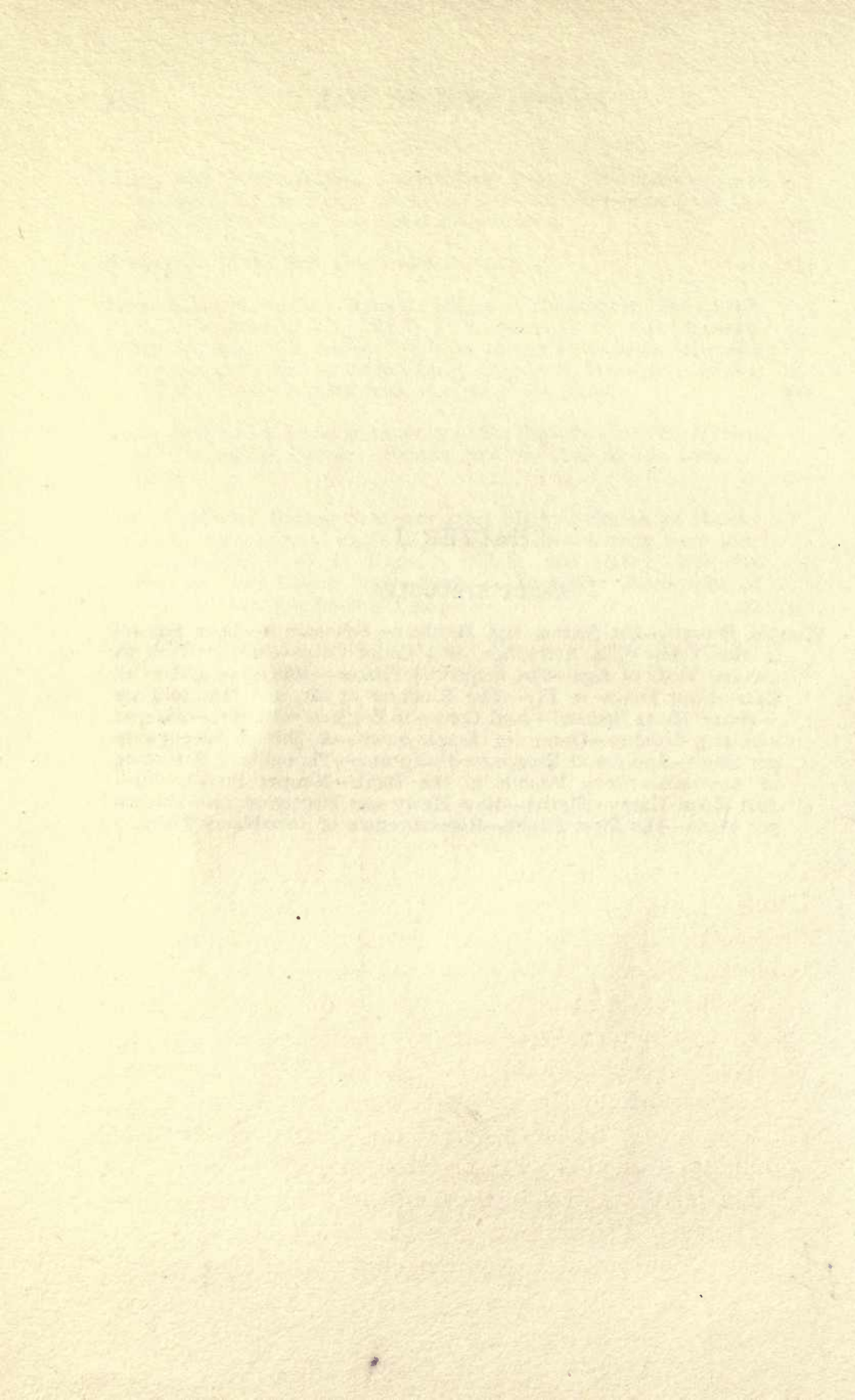
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CHAPTER I

EARLY STRUGGLES

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H. G. HAWKER, AIRMAN: HIS LIFE AND WORK

CHAPTER I

THERE was born at Harcourt, in Victoria, Australia, on January 10th, 1862, one George Hawker, whose father was a Cornishman. Grown to manhood, this George Hawker followed the blacksmith's calling, and on May 24th, 1883, he married Mary Ann Gilliard Anderson, a spinster, of Scottish stock, who was born on October 9th, 1859, at Stawell, also in Victoria. There were four children of the marriage: Maude (the eldest), Herbert, Harry, and Ruby (the youngest). The elder boy, Herbert, born in 1885, was unlike his brother in many respects. For instance, as a child he was very delicate, a circumstance which hampered him in his studies. Nevertheless, he was very fond of school, and he invariably worked well and progressed in spite of his ailments. He excelled in music. Although he had only recently married, Herbert Hawker joined the Australian Forces at the outset of the Great War, and he suffered great privation and illness at Gallipoli. He was later badly gassed on the Western Front, and his life was despaired of in consequence. Having partially recovered, he returned to Australia, bearing the honorary rank of captain. He has two children, a girl and a boy.

Maude and Ruby Hawker are both married, the elder having two boys, Alan ("Bobbie"), born in 1910, and Howard ("Bill"), born in 1912. Both boys display the aptitude for engineering which undoubtedly runs in the family, the elder having driven and attended to his father's car at the age of nine years.

Harry Hawker, or—to give the subject of my biography his

full names—Harry George Hawker, was born on January 22nd, 1889, at the little village of South Brighton (now known as Moorabbin) in Victoria, where his father had a small blacksmith's and wheelwright's shop which brought in enough to keep the family in comfort. George Hawker has at least two claims to fame, which, arranged chronologically in order of occurrence, are, first, that he was the father of a great aviator, and, secondly, that he himself was a fine shot, for in 1897 he came to England with the Bisley Rifle Team and won the Queen's Prize.

At the age of six, Harry was sent to the school of Mr. W. J. Blackwell, B.A., at Moorabbin. He took no interest whatever in his studies, either then or ever during his school career. For this inadvertence he was sorry in later years. He was almost continually running away from school and always in trouble. In the space of little over six years he went to four different schools. After leaving Mr. Blackwell, Harry was sent to a school at East Malvern, presided over by Mr. M. T. Lewis. He was not long there, for in 1896 he was attending a school at St. Kilda, whither his parents had moved. Harry was even more unsettled at St. Kilda, for, without as much as telling anyone at home, he left his school and presented himself at another school, at Prahran, where they had a cadet corps which attracted him. He became a cadet, but, still restless and unmanageable, he ran away from school for good at the age of twelve and started work with a motor firm, Messrs. Hall and Warden, for five shillings per week. When fifteen years of age he had an extraordinary knowledge of motors for such a youngster, and he was considered one of the best car drivers in Victoria at that time. As a child, Harry's sole ambition was to become an engineer, and while at school he designed and built engines in his spare time.

After leaving Hall and Warden's, he joined the Tarrant Motor Company, with which firm he made considerable headway and soon became one of their leading motor experts, and that notwithstanding his extreme youth, which he always tried to hide by adding a year or two to his age. However, that restless-

ness, which was probably only due to his having reached the limit of progress in his present job, again claimed him, and, tempted by the offer of a workshop of his own, he took up the work of looking after a fleet of private cars belonging to a Mr. de Little, for which he received a salary of £200 per annum. About this time, too, Harry's father was running a small steam plant which enabled Harry to test several of his ideas. It was while Harry was with Mr. de Little that his old ambition to follow an engineering career resolved itself into a desire to fly. It may have been the fact that very little was then known of aeronautical science, particularly in Australia, or perhaps Harry was attracted by the most intricate branch of engineering—but whatever the origin of the idea, Harry had made a firm resolution, and he looked around for his opportunity to carry it out; but for several months the prospects were not bright.

While Harry was working for Mr. de Little he lived at a small country hotel at Caramut, kept by Mr. and Mrs. McPhee, of whom he could never speak too highly. They were extraordinarily good to Harry, and when he left Australia they insisted on insuring his life; and they continued to pay the yearly premiums until he died. After Harry's death, one of the most human letters I received came from Mrs. McPhee, with the insurance policy enclosed. The amount was very small, but the wealth of good nature which prompted such a disinterested tribute to his lovable personality was worth untold gold.

When he had been with Mr. de Little for nearly three years, Harry, then about twenty years old, met by accident one Busted, who, inspired by the sight of a Wright and a Blériot, was leaving for England in a week. Having saved about £100 during his period of service with Mr. de Little, Harry decided to go with him, with the idea that in England his ambition to learn to fly would easily be realised. Accordingly, within a week he had thrown up everything, and with no misgivings was crossing the world in search of the knowledge of flying for which he had yearned so long. He was, as always, full of confidence in himself.

From the time he started work at five shillings per week he never looked back. He gave no thought to the possibility of his not making good in England. He left Australia for England to learn to fly, and either did not or would not recognise that in the Old Country he would be likely to meet with keen competition in his quest.

There is no doubt that the trouble he experienced in getting any sort of work, even apart from that on which his heart was set, was a great blow to his confidence, for after nearly a year in very poor jobs in large workshops, where there seemed to be little or no scope for his ability, he contemplated returning home and taking up his old work. This was the only occasion, in a life full of ups and downs, when he seriously thought of throwing up the sponge and yielding to the line of least resistance. In all other adverse circumstances he revealed a spirit of indomitable courage and endurance. There is no measuring a man's actual worth, but had Fate not kept Harry here we should have been several iotas deficient in our air supremacy in those dark days which followed on so soon, when iotas were of incalculable worth.

Harry and Busteed first arrived in London in May, 1911, with Harrison and Kauper, two other friends who had also travelled from Australia. All four were destined for aeronautical careers, Harry and Kauper, with nothing definite in view, left the others and looked for "diggings." Although they had very little money, they decided to have a holiday and enjoy the sights of London before seeking employment. After a couple of weeks or so, Harry started to look around for a firm who wanted to teach someone to fly. This preliminary search was unsuccessful, so Harry, full of life and confidence, thought he would obtain work in an engineering shop and bide his time in finding the work he most wanted. Funds were getting low, and the quest for any sort of job was rendered very difficult by the fact that most of the people whom he approached would not consider employing him because he had no references in this country, a circumstance which Harry was at a loss to understand. In Melbourne there was not

a firm but would have taken him, but in England his own word for his ability was not enough.

Eventually he offered to work for a week for nothing, as a test of his ability, but this was of no avail. The outlook became very black. With Kauper, he moved to cheaper lodgings, where he was barely able to afford the necessities of life. They knew no one in the country except their two fellow-travellers, but Harry was too proud to let them know his plight, and would starve first. He continued to write cheerful letters home, telling of prospects, but never a word as to the actual state of his affairs. He would not have his parents think he needed financial help from them.

On July 29th, 1911, after two bad months, fortune changed a little for the better, as he managed to get work with the Commer Company at a remuneration of 7d. per hour. He continued, of course, to hunt for the opportunity which would bring him nearer to the realisation of his hope of flying, and so, when offered a remuneration of 9½d. per hour by the Mercedes Company he had no scruples about leaving the other firm at the end of January, 1912. He was with the Mercedes Company for less than two months, as on March 18th he accepted a better post with the Austro-Daimler Company. In the meantime, although he had approached very little, if any, nearer his goal, he had gained invaluable experience. Furthermore, whenever possible, he had saved his money, and any that he spent on recreation paid for weekly visits to Brooklands to watch the flying there.

He was thankful that he had been economical and saved £40, enough to take him back to Australia, when, after nearly a year, he despaired of ever realising his ambition to fly. Then it was that Kauper, who had been experiencing bad times as regards work, saw that Sopwith's were advertising for a mechanic, and, being out of employment, immediately applied for the job, with success. It was arranged that if the work turned out to be what they wanted, Kauper was to let Harry know. Having regard to what he had suffered, Harry would not now give up his

job with the Austro-Daimler firm unless for something equally secure and permanent, and he would wisely have refused even a flying opportunity that did not fulfil such conditions. He did not want to run any unnecessary risk of being without work again.

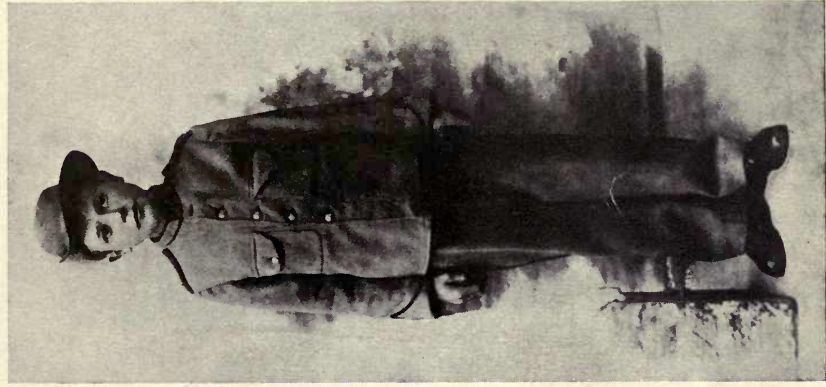
Within a week of Kauper taking up his new work Harry received a wire from his friend, telling him to come down at once and that the prospects were good. Without a second's delay, Harry packed up and left London for Brooklands, but little dreaming that he was on the point of realising his wildest hopes. Meanwhile, Kauper had discovered the work to be exactly what Harry was seeking. The Fates were kind, and a few days after Kauper had joined the Sopwith Company a lot of extra work turned up, necessitating the employment of still another mechanic. Kauper approached Mr. F. Sigrist, the works manager, by whom he was engaged, and told him he knew of "an Australian, a good mechanic, very keen to fly and ready for any sort of job with an aeroplane firm." Sigrist told him he could arrange an interview, and so it was that, in reply to the wire mentioned above, Harry, complete with bag and tool-kit, presented himself ready to start work at once on June 29th, 1912.

It did not take Sigrist long to find out that in Harry he had a good man. He was very hard-working and exceptionally quick and accurate, and he could tackle any mechanical construction work. That Harry shone as a mechanic was Sigrist's opinion. His whole heart was in his work. He worked fifteen hours a day on seven days a week, with £2 at the end of it. For the first time in England he was happy, notwithstanding hard work and little pay. His old confidence returned, and he no longer thought of getting home. The £40 he had saved he offered to Sigrist to be allowed to use a machine. Sigrist told Mr. Sopwith his star mechanic wanted to fly, and so Harry's hopes materialised and he received his preliminary lessons.

At this time Sopwith was conducting a flying-school and had several pupils, between whom there was great competition for getting the use of the school machine. After Harry had done a



MRS. GEORGE HAWKER—
HARRY'S MOTHER.



HARRY AS A CADET AT
THE AGE OF 12.



MR. GEORGE HAWKER—
HARRY'S FATHER.

little taxi-ing on the aerodrome he seemed never to be able to get hold of the machine. But at last it was arranged that he could have a fly at 7 o'clock one morning. In those days a flight of such a nature by a pupil would last for from three to ten minutes. Not so in Harry's case, for Sigrist appeared on the scene at 8 o'clock, to find Harry still in the air after almost an hour! His progress under Mr. Sopwith and Mr. Hedley was exceedingly rapid, and he was acting in the capacity of an instructor before he had passed the tests for the Royal Aero Club Aviators' Certificate. Among his pupils were Major H. M. Trenchard and Captain J. M. Salmond, both now officers of high distinction in the Royal Air Force.

Harry's hopes and prospects were now as bright as they could possibly be. As soon as he had taken his "ticket" (i.e., R.Ae.C. Aviator's Certificate), he was placed in charge of the hangars at Brooklands, where his real career began. Some of the gay times they had in those early flying days are worthy of record.

The firm, which later developed into the Sopwith Aviation Company, employing about 3,000 men, but consisted then of Mr. Sopwith, Mr. Sigrist, and about a dozen men, launched out with the purchase of a "racing" car when they had made a few pounds. This was an old Panhard of 16 h.p., fitted with a Victoria body and always accompanied by sundry disturbing noises. This genuine piece of antique was later fitted with a two-seater body, not to satisfy the wishes of its many drivers for a sporting effect, but because it provided at the back an enclosed space for carrying various impedimenta. On Saturdays and other festive nights it was customary for this useful part of the body to be discarded, and the turn-out would proceed, covered with mechanics, mud, and a very little glory, to the Kingston "Empire."

This weekly trip from Weybridge to Kingston was never accomplished without incident in the form of some hitch or adventure. For instance, the tail-light, which no one had time or energy to adjust during the week, was wont to fail, and the policeman's whistle was not infrequently heard. Whistle!

"What's that, Fred?" Harry would say to Sigrist. "Tail-light out, or did we run over that old girl?" "No, it's only the light." And so they proceeded, leaving the back to take care of itself. The eight or nine mechanics, carried on these journeys, were generally needed. Tyres were always going off; lamps always going out; and various bits and pieces of the car going astray on the road. All had, therefore, to work their passage.

Harry never tired of telling of the fun of those days, and although he was the keenest of workers, he was always ready for some fun, not a little being provided by the antics of a pet bear kept in the sheds at Brooklands and brought from America by Sopwith.

Harry's delight in playing tricks never left him. Only a short while before he died we were spending a week-end with my parents. After we had all retired for the night I overheard a council of war between my brother and Harry. They crept stealthily downstairs. When, after about an hour, Harry arrived upstairs, I could extract no lucid explanation of what he had been doing. However, the next morning the sight of a white door in the dark dining-room when we sat down to breakfast explained his activities of the previous night. He had changed the white door of the drawing-room for the dark one of the dining-room. The cook gave my mother notice to leave immediately after breakfast, as she was not used to "being made a fool of." There was only one person who saw her being made a fool of, but that person's tale of cook's exit through a door she knew so well which had suddenly gone "all gleaming white" was so funny that I am sure her manner of accepting the joke was better appreciated by the perpetrators than by the fools for whom it was intended.

CHAPTER II

THE BRITISH DURATION RECORD

Harry's Aversion to Publicity—Circumstances of His First Brooklands Associations—The Sopwith-Burgess-Wright Biplane—Harry's Effort in a Quick-starting Competition—Beating His Employer—Early Attempts for Michelin Laurels—A Real Success—Tuning-up for the Duration Record—Raynham Makes a Race—And Secures an Advantage—Raynham Lands after 7 hours 31½ minutes—And Holds the Record for an Hour or Two—Opportunity Knocks at Harry's Door—And is Well Received—Harry Lands after 8 hours 23 minutes—To Him the Spoils—His Own Account of the Experience—A Reminiscence of Cody—The Significance of Harry's Achievement—Other Flights at Brooklands—The Growth of a Pioneer Firm.

CHAPTER II

DURING the latter half of 1912, with the buoyancy of the enthusiast and no idea of the meteoric way in which his latent abilities would be developed, Harry embarked on the flying career on which his heart was set, at a time when the spirit of quantity production had not descended to meet the necessities of war and the aeronautical fraternity was happy in its smallness.

Even when he had carried out not a few, but many, flights of a nature unprecedented for a beginner, Harry was known only to a very few near associates ; and he eschewed publicity not only before, but also after, he was drawn automatically and unavoidably within its fold. Fortunately, Harry had no cause to sever a well-made alliance with Mr. Sopwith, who was quick in recognising the genius of his protégé, as a pilot then, and as an engineer later. Had circumstances been less promising, and if Harry had elected to seek work as a pilot elsewhere, the scanty knowledge of his early experiences that had been disseminated would have stood him in little stead, for in 1912 the experiences of most pilots were generally reported in considerable detail ; and here would have been a man with a brilliant record who had deliberately contrived to have as few papers as possible to show for it. A few genuine Press reports are surely of some value to a youngster who, looking for employment, has to make an impression, and particularly if he is not a great talker. But one cannot blame Harry for this seeming inadvertence, for he never required such testimonials.

Harry first arrived at Brooklands at a time when things were literally moving rather slowly and the hub of British enterprise in aviation was showing a pronounced tendency to deviate to

Hendon, whither many of the bright spirits that were formerly the life of Brooklands had already departed. Mr. T. O. M. Sopwith (now C.B.E.), who gave Harry his start in aviation, had recently returned from a successful American tour, during which he had participated in several motor-boat races and incidentally had commissioned the well-known American boat-builder, Burgess, to construct, under licence from the Wright Brothers, an aeroplane, known as a Burgess-Wright biplane then, and as a Sopwith-Wright after reconstruction by its owner in England.

As it was on this machine Harry made his reputation as a pilot of the first rank, a few references to its design and construction are not out of place. The original machine built by Burgess to Sopwith's instructions, contrary to the customary Wright practice, was fitted with controls of the Farman type and a Gnome rotary engine. Having brought the machine to England, Sopwith replaced the Gnome engine by a British-built A.B.C. of 40 h.p., and proceeded to manufacture in his sheds at Brooklands duplicates of all the component parts of the aeroplane. Thus the machine, when ultimately reconstructed, became all-British in conformity with the requirements of the competition for the British Empire Michelin Cup No. 1. The machine had twin propellers, driven through the medium of chains connected with the single engine, and on the right-hand side of the latter was arranged the pilot's seat. The machine was therefore of a distinctly novel type, at any rate so far as concerned this country, where few Wright machines had been seen. One innovation added to the design by Mr. Sopwith (to protect the pilot from the wind) was a nacelle, resembling in appearance a side-car body, and it is probable that without this feature Harry would not have been able to put up as many long flights as he did. Passengers in this machine enjoyed a particularly novel sensation in sitting beside the engine instead of in front of or behind it, and in landing they received the impression that the chassis had collapsed, so low was the build of the machine as compared with other contemporaneous types.

Four days after he had his first lesson in the art of flying, Harry flew alone in the Sopwith-Farman machine. His remarkable genius was thus revealed at the very beginning of his career in aviation; and by Sopwith, his tutor, he was afforded full scope for the development of his abilities. Within a month he qualified for his R.Ae.C. Aviator's Certificate, the number of which was 297; and so rapid was his progress that when he successfully essayed his flight for the British duration record he had only put up a total flying time of about twenty hours.

After obtaining his certificate, Harry lost no time in pursuing the purely sporting side of flying, and on Saturday, October 5th, 1912, he participated in a Quick-Starting Competition, at Brooklands, on the Sopwith-Farman biplane. There were eight other competitors. Harry tied for second place with the late Harold Barnwell, who was piloting a Vickers-Farman biplane, their times being 6 seconds. An interesting circumstance of this contest was that on running off—or, rather, flying off—the dead heat, Harry and Barnwell both completed the evolution in faster time than E. C. Pashley, the accredited winner of the race, whose time was $5\frac{2}{5}$ th seconds. Harry's time for this second performance was 5 seconds and Barnwell's $4\frac{1}{5}$ th seconds. Sopwith, who competed on two machines, a Sopwith-Farman and a Sopwith-Tractor, for which his times were 7 seconds and $7\frac{2}{5}$ th seconds respectively, had the doubtful pleasure of being beaten by his pupil.

Harry essayed his first flight on the Burgess-Wright, on which he was subsequently to achieve the British Duration Record, on October 15th, 1912. Being already accustomed to the Farman type controls, he found no difficulty in handling the machine, and after completing a few circuits and practising landings he felt thoroughly at home on it. The following morning at 6. 51 a.m. he set out on a test of 3 hours 31 minutes in competition for the British Empire Michelin Cup No. 1 and the £500 prize. The Cup had previously been won by Moore-Brabazon in 1909 and twice by Cody, in 1910 and 1911. In the 1912 competition a continuous

flight of not less than five hours' duration had to be made, the award going to the competitor remaining the longest time in the air in a single flight without touching the ground. Although unsuccessful as a qualifying flight in the competition, Harry's first attempt, lasting as it did for three and a half hours, on a machine of a novel type which he had flown only for the first time on the previous day, was a most creditable achievement, especially, too, for a pilot who had won his brevet only a month previously. Such a flight, in such a remote period in the annals of aviation as 1912, would have been considered no mean performance for the most experienced of pilots. The flight, which was carried out at Brooklands at an average height of 500 feet, was terminated owing to the fracture of a valve-spring. Harry made two other unsuccessful attempts to win the Cup, the first lasting 2 hours 43 minutes, and terminating abruptly owing to a sudden gale, and the second of 3 hours 28 minutes, ending owing to rain.

As the Michelin Competition definitely closed on October 31st, there was no time to lose, and on Thursday, the 24th, Harry put up a flight of 8 hours 23 minutes, which proved to be the British Duration Record held by him for several years. On the same day a flight of $7\frac{1}{2}$ hours was made by his friend Raynham, who held the British Duration Record for a brief spell of 1 hour 35 minutes, having started and finished before Harry. Lord Charles Beresford was among those who witnessed these record flights. I cannot do better than reproduce the following account communicated to the *Aero* by its special correspondent in November, 1913.

"We were astir early in the Sopwith camp on Thursday, October 24th. Not that this was the first early-morning attempt on the Michelin prize. The same thing had been going on for a week past, and no fewer than three times in this week had the new Sopwith twin-screw A.B.C.-engined biplane sallied forth. Hawker, the pilot, had been chosen to fly the Sopwith 'bus,' and his determination, skill, and enthusiasm through this and the previous attempts justified the faith put in him for such a

task. Hawker is a young Australian, and, like his fellow countrymen Busteed, Pickles, and Harrison, he shows very great promise as a flier. Joining the Sopwith school as a mechanic, he was allowed to learn on the orthodox school type Farman, and he early displayed his aptitude for this work by going up to 1,000 feet and remaining there for fifty minutes on the fourth day of his training.

"Of his three previous attempts on the Michelin Duration Competition little need be said ; the first one was terminated after 3 hours 31 minutes by a valve-spring breaking. On the second attempt the wind, after 2 hours 43 minutes proved too much for further flight, and the third attempt ended after 3 hours 28 minutes in a rainstorm, which soaked the magneto through, and temporarily ended its career.

"With serious designs on 'durling,' the Sopwith camp was awake and bustling, and excitement ran high when it was seen that Raynham was to make a simultaneous attempt on the military Avro biplane (enclosed body type), fitted with a 60 h.p. Green engine. Hawker got away just before 7 a.m., but was brought down again after a flight lasting no more than twenty minutes by the magneto cutting out occasionally. Apparently it had not recovered from the effects of its previous soaking. This contingency had been anticipated, however, and a brand-new British-made Bosch had been ordered previously, which, however, had only arrived late the night before. The old 'mag.' was hurriedly removed and the new one fitted, but even minor details of this kind take time, and in this case the time was all too precious. In timing the magneto it was found to run the wrong way round, and it had to be dismantled and a new commutator fitted.

"Meanwhile Raynham got away on the Avro at 7.40, which meant eventually a start of 1h. 35m. He seemed to have a little trouble in carrying his load, as he had to make three attempts to get off, and he was flying very *cabré* through the earlier part of his flight. The Green engine, however,

sounded serious, solemn, and steady, and seemed to inspire confidence. Hawker made a start at 9.15 without even testing or trying the magneto in any way.

"Then commenced a magnificent and exciting contest which lasted till well after dark.

"The A.B.C. spluttered a little at first for want of a warming-up, but by the time it had done one circuit of Brooklands its revolutions were up to 2,000 per minute, and Hawker was able to throttle down slightly. There was a tense feeling all round, and an ache in the heart of the Sopwith crew that the magneto had not been properly fitted during the previous night. Hawker's handicap was realised more and more when it was found that if Raynham remained aloft until within 1 hour and 35 minutes of the limiting hours of the competition (which were from sunrise till one hour after sunset), Hawker could not possibly win.

"There was a stream of people to and from the anemometer throughout the day, which instrument happily showed the atmospheric conditions to be little short of ideal. The speed of the wind during the day did not vary more than five to eight miles per hour.

"Raynham, with his wide experience, took the greatest possible advantage of this, and made a really splendid flight, with the Green throttled down to the very slowest revolutions that the machine would fly with, and with the tail dropping in what appeared to be a fearful position to the onlookers. Hawker, with tail well up (and his machine lifts the loads remarkably easily), was flying steadily round at a height of about 400 feet, the A.B.C. emitting a steady hum. Raynham, on the other hand, was flying very low, and on some occasions was only about 30 feet high. By about eleven o'clock he evidently had become extremely bored with pottering round and round, because he commenced a series of antics round the sheds, and at one time about half-way round a turn he suddenly doubled back on his own track, and did a turn or two round the wrong way, all

the time, however, with his engine ticking round at something like 950 revolutions per minute only, the appearance of the machine being terrifying to behold to those who dread side-slips.

"Hawker all this time was steadily plodding away, making the safest flight possible, and the very machine had a look of determination about it. The two slow-speed propellers turned solemnly round, and the engine explosions were lost in a continual buzz through the high engine speed. That he was out to win if possible was obvious from every movement. Raynham's champions grew a little nervous over the flippancy of their pilot, and a shutter of one of the sheds was quickly requisitioned, on which were painted the words in large letters : 'Fly higher.' It had not much effect, however, although it served apparently to sober him a little.

"Towards one o'clock impatient questions as to how much oil and petrol they were carrying began to circulate amongst the onlookers, and it appeared that Raynham's oil supply was likely to run out before anything else. On more than one occasion the Green suddenly slowed down in revolutions, only to pick up again just as quickly. Someone pointed out later on that the short pipes coupled to the exhaust ports in the cylinders of the Green no longer emitted the puffs of smoke that had been prominent in the earlier stages of the flight, and misgivings as to the oil supply began to travel abroad.

"Excitement reached fever-heat between two and three o'clock, the strain of watching the two machines circle round hour after hour becoming intense. It was not even like a motor race, where one can see fairly early in the run who is likely to be the winner. In this conflict, speed did not even count, and the contest might terminate any second by either running out of fuel or by an engine stoppage. Little work was done in the sheds, and every few minutes mechanics would appear at the various doors to find and call out to their mates that both machines were still up.

“ ‘Raynham’s down !’ The cry spread across the ground at about 3.10 p.m., and a frantic rush was made to the front of the sheds, and sure enough he was just on the point of touching. He terminated his flight at 3.11½ p.m. exactly, having been in the air 7 hours 31½ minutes—truly a splendid performance. We all rushed across the ground, and Fred May, of the Green Engine Co., jumped into his car and came tearing up to the spot. Raynham climbed out, looking somewhat tired, but apparently none the worse for the 7½ hours’ toil. He said that the oil had run out, and though he had held on as long as he could, the engine had been dropping in revolutions for the last half-hour, and he did not want to risk it seizing up altogether.

“Up to the very minute of Raynham’s landing it is doubtful if a single person on Brooklands would have given a shilling for Hawker’s chance of putting up better time than Raynham with the latter’s hour and a half start ; but things now changed, and as all eyes were turned upwards and ears listening to catch the rhythmic beating of the engine, the question went round : ‘Will he keep up for another two hours ?’ The engine sounded happy enough, and if nothing happened there was no reason why he should not, as he had a big load of fuel. The excitement now began steadily to rise as the minutes were ticked off, and to the Sopwith enthusiasts every minute seemed an age. They all went back to find something to do that would pass the time more quickly, but had to come out again with dread in their hearts that they might find Hawker ‘taxi-ing’ along the ground.

“Gradually the time went along, and Hawker was still steadily travelling at his 400 feet altitude. Then Sopwith appeared on the scene at about four o’clock, and brought out his 70 h.p. Gnome Tractor biplane with the intention of cheering Hawker up a little. Taking Charteris as a passenger, he did one or two circuits, climbing up to Hawker’s level, then very skilfully cut across a sharp turn and came alongside. Hawker,

in fear of not lasting out the time, had throttled down to the smallest amount he could fly with so as to economise petrol and oil ; his machine was therefore very slow, and Sopwith had to switch off and dive a little so as not to pass him. The two on the Tractor waved frantically, and shouted encouragements, which, of course, Hawker could not hear at all, but which he undoubtedly understood. Down planed the Tractor again, leaving Hawker with just another half-hour to go through to equal Raynham's time (which, by the way, was for 1 hour 35 minutes the British Duration Record).

"The next half hour was the worst period experienced by a great number of the Brooklands clan, and it is doubtful if any other event ever held on the ground has caused so much interest. Tea was forgotten altogether, and exact minutes and seconds were in the greatest demand, everybody walking about watch in hand. After ten more minutes had passed it was observed that Hawker had throttled really to the very limit so as not to run the slightest risk of running short of petrol. The machine was flying at a terrible angle, with the tail pointing strongly earthwards, and the spectators began to feel nervous. Another shutter was acquired, on which was whitewashed : 'Keep your tail up,' and this was displayed for the pilot, who, however, took but little notice of it.

"Gradually the minutes passed, and a little crowd gathered round the timekeeper, who slowly (horribly slowly to some) counted 9 minutes, 8 minutes, and so on. 'One more circuit will do it !' someone cried, and it did, and as the last seconds passed away, never to be recalled, a huge sigh escaped from the lips of everybody. To some it was a sigh of relief, to others perhaps not, but now the crisis was over everybody was sporting enough to express admiration for a very plucky flight.

"Hawker had evidently had his eye glued to the clock which he carried on board, for now his tail was up high again, the machine sped away full of life, and the time also slipped by much faster now that the face of the watch was not being

scrutinised so carefully. Another half hour passed and darkness began to close in. It had been arranged that a huge petrol fire should be lit when it was time for Hawker to come down, an hour after sunset being 5.48 p.m. It was, however, quite dark at 5.20, and a difficult problem arose in the minds of those on the ground. It was naturally wished to make the flight as long as possible, and therefore to light the bonfire then would have been to bring him down unnecessarily early ; on the other hand, complete darkness might quite possibly cause him to lose himself. A better arrangement would have been to light one fire half an hour before the specified finish, another one a quarter of an hour later, and a third when the time was up, leaving the whole three for him to land by.

"Any misgivings that may have remained in the minds of a few regarding the condition of the engine were quickly put at rest by Hawker at about 5.30 opening the throttle wide and shooting up to between 1,200 and 1,500 feet in so short a space of time as would have made some of our military competitors envious. It was evident he did this to run no risk of petrol running out when he was over the sewage farm or behind the sheds at a low altitude. It was now quite dark, and wanted but ten minutes to the time limit. At this stage one was impressed by the appearance of the long flame from the exhaust. The exhaust pipes were apparently quite red hot the whole time.

"Suddenly Hawker was seen to be intent on making a landing without further delay, and he came down in a perfectly straight line from the far end of the ground with the engine about half throttled. He made a very shallow angle of descent, apparently with the intention of striking as gradually as possible, as the earth could not be seen at all. Those in charge of the bonfires instantly realised the situation, and applied matches to the petrol, which flared up in the nick of time. Hawker straightened up, closed the throttle, and made a perfect landing seven minutes before the time limit.

“There was a rush for the spot where the machine was, and the next five minutes were occupied in cheering, congratulating, shaking hands and patting backs. Hawker climbed out of his seat, having been exactly 8 hours 23 minutes in the air, but he looked easily capable of undergoing the same trial again.

“Relating his experience, Hawker said: ‘When I got away first at about 9.15 I thought the new magneto had been timed incorrectly, because the engine was only turning at 1,600, and would hardly carry the load; before I had done a circuit, however, I discovered it was only a case of getting the engine warm, this taking a particularly long time, because we had fitted two radiators where there only used to be one, even in the summer, and I was carrying nearly six gallons of water all told. This I found afterwards to be really too much, because towards the end I tried to warm my hand on the water-pipe which runs from the bottom of the radiators and found it too cold to touch.

“‘Within five minutes of the start the engine was turning round at just over 2,000 revolutions per minute, and I realised that if I wanted to economise I must throttle down a little. This I did, and ran along steadily at about 1,800 revolutions. I was extremely worried to think that we had let Raynham get such a lead, but there was no hope for it, so I settled down to a long, slow job, determined to stick to it to the end.

“‘I was quite snug and warm inside the little body that had been provided, and the weather throughout was ideal. The engine ran splendidly, and I can truthfully say that it never made a single misfire for the whole period of 8 hours 23 minutes.

“‘I occupied most of my time in keeping one eye on the clock and one on Raynham, who was flying below me, and on several occasions he quite appeared to be “taxi-ing” along the ground. I always noticed that he never came to rest, however, and concluded that he must be flying low. Once he shot across my path about some 150 feet under me, giving me quite a start for the second. On several occasions I lost sight of him for half an hour at a time, and was sometimes worried by

wondering whether I was going to give him my backwash or whether I was getting into his.

““ I had a Thermos flask of cocoa on board, some chocolate, and some sandwiches, all of which I found useful in either passing the time away or relieving the monotony by giving me something to do. I did not look at the exact time that I started, but I knew that I had about an hour and three quarters to do after Raynham had finished. Everything was plain sailing with regard to the petrol supply and oil. The petrol was gravity-fed and the oil pressure-fed. I had a twenty-gallon petrol tank just behind my back, which was coupled directly to the carburetter, and above that I had a twelve-gallon tank, both being full. The twelve-gallon tank was connected by a pipe to the larger tank, and after I had been flying for four hours I turned on the tap in the twelve-gallon tank and allowed the contents of this tank to flow down to the larger one. I discovered afterwards that the pipe from the twelve-gallon to the twenty-gallon tank was not large enough, because when I came down in the evening I could hear the petrol still slowly trickling into the large tank. For the oil, I had a glass gauge in the sump of the motor and a five-gallon tank also behind my back, I started off with two gallons in the sump, and occasionally pumped up a little pressure in the oil tank, opening the tap between the tank and the sump to keep the oil level in the sump somewhere within sight. As the petrol was used and the weight lessened I closed the throttle slightly, the engine running equally well at all speeds.

““ Later on I saw a shutter being carried out with the words “Fly higher ” painted on it. I could read it quite distinctly from 400 feet, but as I felt quite comfortable where I was I did not pay any heed to it. It was not until after I came down that I discovered that this sign was meant for Raynham. It was a great relief to me to see Raynham come down, and I knew this time that he was going to land, because I could see all the people running across the ground towards him.

“‘From then onwards I kept my eyes glued to the face of the clock, the last half hour that would make my flight equal Raynham’s being the most anxious and worrying of the whole day. Every minute seemed an hour, and as I was afraid that the petrol in the top tank might not be flowing properly into the main tank, I closed the throttle for the last twenty minutes down to the very limit the machine would fly with. I must have been flying then at only about thirty-five miles per hour. Then I saw the 70 h.p. Gnome Tractor ’bus come out, and watched Mr. Sopwith with interest. I guessed what he was coming out for, and when I saw him make straight for me, broadside on, I kept on a perfectly straight course, knowing well that he would be careful not to hinder me in any way. He came quite close alongside, and I distinctly heard them both shout (my A.B.C engine had a silencer fitted), but I could not tell what they said.

“‘Painfully slowly the minutes rolled away, but at last I realised that I was the holder of the British Duration Record. When I was quite sure of this I opened up the throttle again, as I had not much to fear now, but I was still determined to keep up in order to give anyone else a good run in order to beat it. When it was getting nearly dark I pulled open the last notch of the throttle and climbed up to 1,400 feet on the meter, and I did this very rapidly. Darkness came on, and I could see very little but the red-hot exhaust pipe and the reflection from the burnt gases. The dim lights of the Blue Bird served as a little guide to the position of the ground, and when I felt sure it must be quite 5.50 I decided to come down immediately and make a guess at where the ground was, as I felt sure they had forgotten all about the fires, and I did not want to get lost and smash the machine up. Just as I was landing the fires flared up, and I came to rest and found everyone as pleased as I was.’”

NOTE.— The foregoing verbatim report of Hawker’s experiences in making the British Duration Record is reprinted from the *Aero* of November, 1912.

In attempting, with characteristic pluck, to beat Harry's record on the last day of the competition, Cody unfortunately collided with a post on landing after a trial flight, and a wing was buckled in consequence.

The performance whereby Harry not only won the British Empire Michelin Cup No. 1, but also captured the British Duration Record, brought him into the front rank of British pilots and marked an important point in the annals of British aviation. Public attention was attracted to a type of machine of which little was known in this country, although it bore the pioneer hall-mark of the Wrights. For the Sopwith Aviation Company the flight was a great business asset and a sure foundation for the goodwill of the concern.

Harry took part in an Altitude Competition on Saturday, November 9th, 1912, at Brooklands, in which event Barnwell was the only other competitor. Unfortunately the race had to be given to Barnwell, as Harry had omitted to set his barograph at zero before starting, so that the exact height he reached was not recorded. Nevertheless, the immediate excitement of the contest did not suffer through this inadvertence.

A Bomb-dropping and Alighting Competition, in which competitors had to drop their bombs on or near a given target and land within a minimum radius of a given mark was held on the Saturday following. The first and second places went to Merriam and Knight respectively, Sopwith, Bendall, and Harry being the "also rans." Sopwith, having succeeded in making a direct hit with his bomb, misjudged his landing, a circumstance which disqualified him.

Harry shared in a big success in a Relay or Despatch-carrying Race on Sunday, November 17th. In this contest the competitors worked in pairs. One pilot would start off with a despatch, and, after flying one-and-a-half laps, land and hand the commission over to his partner, who in turn would fly over the same course, alight, and hand the despatch to the judge, the winning pair being those who made fastest time. In the particular contest,

which was flown in perfect flying weather, it was originally intended that each pair should comprise a biplane and a monoplane, and Hamel flew over from Hendon on a Blériot for the special purpose of competing, but the scarcity of monoplanes owing to the War Office ban on machines of that type resulted in only biplanes taking part. The first prize went to Harry and Spencer, the latter flying a machine of his own construction. Their total time for the course was $9\frac{1}{2}$ minutes. Barnwell and Merriam, of the Vickers and Bristol Schools respectively, on Farman and Bristol machines, took 10 minutes 10 seconds, and Bendall and Knight, on a similar pair of machines, took 10 minutes 12 seconds.

On Sunday afternoon, November 24th, just before dusk, a Speed Handicap over two laps of the Brooklands course was decided. The handicapping was, on the whole, good, Alcock,¹ Sopwith, and Knight, the first three home, all finishing in that order within a space of four seconds. Harry finished, but was unplaced. It is interesting to note that this was the first race in which Alcock participated. He had recently obtained his brevet at the Ducrocq school. Sopwith made fastest time.

Harry had his machine out on the following Sunday to take part in another Bomb-dropping and Alighting Competition, but as the contest was on the point of starting rain came on and put an end to flying for the remainder of the day. The contest was postponed until the next Sunday, but Harry was unavoidably absent.

Busteed, Harrison, and Harry, who had all migrated from Australia together in April, 1911, had all now achieved some distinction in flying, and Australian prowess in the art was well in the ascendant. Busteed and Harrison were doing big things for the Empire as instructors of flying, and Harry, by his record flights, was doing much to promote British aerial prestige.

The business of the Sopwith Company having expanded

¹ The late Sir John Alcock, K.B.E.

extensively in the meantime, Mr. Sopwith had decided to lease a skating-rink in Canbury Park Road, Kingston-on-Thames, so that more room than could be provided in the sheds at Brooklands should be available for the construction of machines to meet increasing demands from the Admiralty, War Office, and foreign governments. The skating-rink was ideal, not only on account of the space available for erecting big machines, but also owing to the level floor, which was a great facility. Mr. Sigrist, who had been largely responsible for the design of the Sopwith Tractor biplane and had accompanied Mr. Sopwith on his American tour, was the works manager there.

And so I leave 1912, conscious of the fact that, in the few months during which he had been flying, Harry had contributed in some considerable measure to the fostering of that record-breaking spirit so necessary for the advancement of the new art and science.

CHAPTER III

ABOUT ALTITUDE AND OTHER RECORDS

A Colleague's Impression of Harry in 1913—Harry in the Passenger's Seat—"Aerial Leap-Frog"—Competition Flights at Brooklands—Testing the First "Bat Boat"—End of the First "Bat Boat"—Harry as a Salesman-Demonstrator—Testing the Second "Bat Boat"—70 Miles per Hour in 1913—Ascent to 7,450 feet in 15 minutes—A Prize Flight—How Harry Deserted from a Race which He Won—How a Biplane Beat a Monoplane—More Seaplane Testing—The British Altitude Record—11,450 Feet—"Bravo, Hawker!"—A Journalist's Tribute—Flying in a High Wind—To the Isle of Wight and Back.

CHAPTER III

EVEN greater things were in store for Harry in 1913, for although the British Duration Record was an achievement to be handed down to posterity, it pertained only to British aviation. His performance in the Round Britain Seaplane Race, so generously promoted by Lord Northcliffe and the *Daily Mail*, as one of the milestones in the early progress of marine aircraft, will live in the world's history unbounded by nationalities.

A friend who worked in the shops at Canbury Park Road, where he took part in the construction of the Round Britain seaplane, well remembers with the observant eyes of a hero-worshipper seeing Harry make daily tours through the works in company with Messrs. Sopwith, Sigrist, and R. O. Cary, the general manager. Other than a sturdy physique and cheery countenance, Harry bore nothing to indicate that he was an aviator by profession. He was wholly without affectation and a favourite with everyone belonging to the Sopwith concern.

Sir Charles D. Rose, Bart., M.P., Chairman of the Royal Aero Club, handed to Harry on Tuesday, January 7th, 1913, a cheque for £500 in respect of the prize awarded in connection with the Michelin Competition. Of this sum, Harry received 25 per cent. as remuneration for his special services to the Sopwith concern. On the same day, too, Cody received his cheque for £600 in connection with the No. 2 Michelin Competition.

Mr. Sopwith himself was out testing a new tractor biplane on Friday, February 7th, 1913, at 7.20 a.m., carrying Harry as a passenger. To ride in the passenger's seat of an aeroplane of new design is a task simple enough truly, but not too pleasant for an experienced pilot. This flight speaks volumes for the great confidence which Harry always had in his friend and benefactor.

This new tractor-type machine was dismantled after the flight and sent to Olympia for the Aero Show, where it was purchased by the Admiralty. After the Show, Harry himself tested the machine at Brooklands, flying for $1\frac{1}{4}$ hours on March 1st preparatory to handing it over to the responsible naval authority, Lieut. Spencer Gray, who flew it to Hendon with a passenger.

The Sopwith-Wright machine was still in service, and Harry was flying it on the Saturday. On the Sunday, February 9th, he was third in a Quick-starting and Alighting Competition, during which he was lost to view above the clouds.

Harry also scored a "third" in the Speed Handicap at Brooklands on Easter Monday. Inasmuch as the spectators were left uninformed as to the result of the race, the event was a farce. Harry, on the Sopwith-Wright, was very severely handicapped, and had it not been that Barnwell passed the finishing-post on the wrong side, he would not have been "placed."

The weather being particularly favourable, some very fine flying was seen at Brooklands on Sunday afternoon, March 29th; over a dozen machines being out. There were no races, but numerous exhibition and passenger flights were indulged in. Harry interested the spectators by practising "aerial leap-frog" on the Sopwith-Wright, a performance which caused much astonishment. With the propellers completely stopped, he made a well-judged landing from a considerable height.

During March, 1913, the first tests of the Sopwith "Bat Boat," which had made its *début* at the Olympia Show, were carried out at Cowes. Sopwith, whose motor-boat experience stood him in good stead, first took the machine out, but although a speed of sixty miles per hour was attained, the machine would not leave the water. Harry had a shot at it, but with no better success. Sopwith, making another effort, rose a few feet, but the hull landed heavily and was damaged. Left out all night on the beach, the machine was almost destroyed by a gale, one report circulating to the effect that only the engine and propeller remained intact!

Harry was not hampered by any scruples with regard to trading on the Sabbath, for on Sunday, April 13th, 1913, he set out to play the rôle of aeroplane salesman, and incidentally to make his Hendon début. The specific purpose of his flight on the Sopwith-Wright from Brooklands to Hendon was to offer the machine for sale to the Grahame-White Company, whom he regarded as good potential purchasers, as they had recently sold two of their machines to the War Office and would require others to replace them in order to cope with increasing demands for exhibition and passenger flights at the London aerodrome. On the way there he had a forced landing at Wormwood Scrubbs, but was able to proceed and complete the whole journey in 40 minutes, inclusive of the delay. He terminated the flight by making several circuits of the aerodrome at Hendon, and subsequently made a number of other exhibition and passenger flights which demonstrated the wonderful handiness and air-worthiness of the machine. His passengers during the afternoon included Manton and Gates, both well-known pilots of the Grahame-White Company. Passengers were greatly impressed by the stability of the machine and the strangeness of sitting on one side of the engine. Landing, too, was rather a new sensation, as the seats were so low in comparison with those of other types that to one on the point of touching the ground the landing chassis seemed to have fallen off!

On the following Sunday, at Hendon, Harry carried several more passengers, and at times there were as many as eight machines in flight simultaneously.

Harry tested the second Sopwith air-boat at Brooklands on Monday, May 25th. The machine, engined with a 100 h.p. Green, which was a development of the original "Bat Boat" mentioned above, was fitted with a temporary land chassis. One of the struts of this gave way on landing, resulting in damage to the left aileron. The original "Bat Boat" had warping, or flexing, wings.

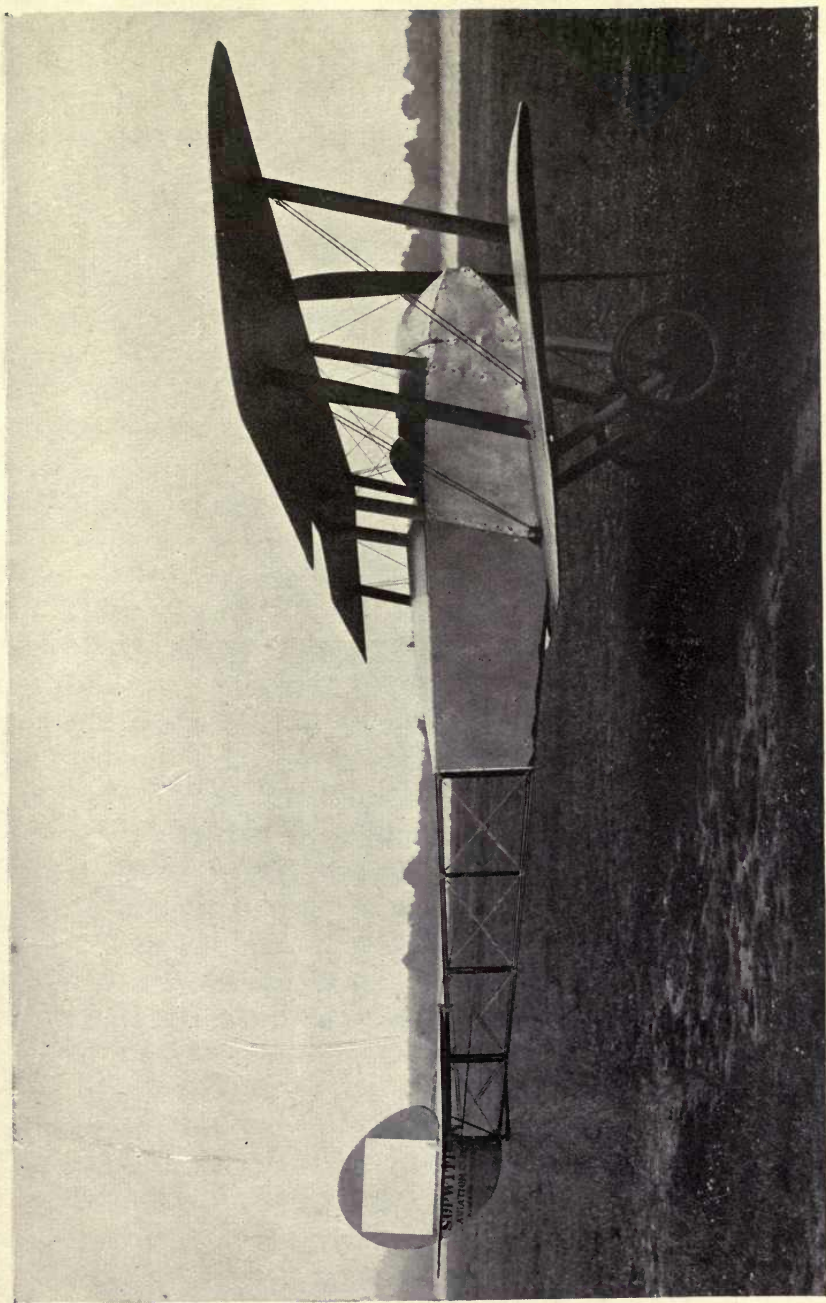
Tuesday, May 6th, saw Harry testing a new Sopwith Tractor

biplane engined with an 80 h.p. Gnome. This machine was a three-seater, and on the Wednesday he had two passengers up for half an hour above 1,000 feet. He flew the machine over to Farnborough on Friday, May 9th, where he carried out an official test, when a speed of 73·6 miles per hour was attained.

On May 10th, 1913, the Saturday before Whitsun, with Harry in charge, the new 80 h.p. Gnome Sopwith Tractor biplane fully justified the big things that were expected of it, at Hendon, whither its reputation had travelled in advance. Harry flew over from Brooklands to take part in an Altitude Contest in competition with Verrier on a Maurice Farman, Robert Slack on a 50 h.p. Gnome Blériot, Brock on a 35 h.p. Deperdussin, and Hamel on an 80 h.p. Blériot. The machines left the ground at short intervals and were all soon out of sight, hidden by clouds. In making a single circuit of the aerodrome, the Sopwith machine climbed 2,000 feet. Hamel was first down after about 20 minutes, quickly followed at short intervals by Slack, Verrier, and Brock, in the order named. Harry, however, was nowhere in sight, and did not appear again until about forty minutes after he had started. As there was a time limit in the contest, the judges, having concluded that Harry had made a forced landing elsewhere, announced the following result :

1. Verrier	4,450 ft.
2. Brock	4,300 ft.
3. Slack	4,000 ft.

Hamel retired, disqualified by a faulty barograph, although he had ascended to somewhere above 7,000 feet. In the meantime Harry had reached an altitude of 7,450 feet in 15 minutes—a truly remarkable performance. At that height, having lost his bearings, he decided to land, which he did at Ponder's End, a few miles east of Hendon, still keeping his engine running while he enquired of a passer-by his whereabouts. Having returned to the aerodrome and satisfied the judges that he had landed



THE SOPWITH TABLOID, THE PROTOTYPE OF THE FIGHTING SCOUTS, DESIGNED BY HARRY, IN ITS MODIFIED FORM FOR LOOPING-THE-LOOP, AFTER HIS RETURN FROM AUSTRALIA.

within the prescribed time limit, he was finally adjudicated winner of the contest. The particular machine was one of a series ordered by the Admiralty.

Immediately after this fine performance Harry competed in the Speed Handicap for the Shell prize of 100 guineas. The race was flown in heats, Harry being scratch man in the second heat and giving 55 seconds to Slack and 1 minute 57 seconds to Lewis Turner, who was flying a Caudron biplane. Turner won the heat by 17 $\frac{3}{4}$ th seconds, and Harry came in last, three minutes behind Slack. His failure may be attributed to bad handicapping, which could hardly be avoided in the case of almost the first public appearance of a new machine with a genuine reputation preceded most probably by an exaggerated one. After witnessing the final, won by Turner, Harry left for Brooklands, where, on Whit-Sunday, he carried several passengers and also tested the engine of the Sopwith hydro-aeroplane.

On Whit-Monday, May 12th, 1913, at Brooklands, Harry was one of three starters in the Whitsun Cross-Country Aeroplane Handicap. Rain fell during the race. Alcock was first away on Ducrocq's Henry Farman, but had to abandon the race almost immediately owing to the strong wind nearly blowing his relatively slow machine backwards. Harry was next away on the Tractor, with a start of 76 seconds from Gordon Bell, who flew the 120 h.p. Martin-Handasyde monoplane. Harry made a quicker start than Gordon Bell, who sacrificed several seconds when the starter's flag fell. At the first turning-point Bell had picked up 36 seconds over Harry, but lost several through turning on an unnecessarily big radius. At the second turn he gained another 10 seconds, but also lost owing to the same cause. Harry won a fine race by 39 seconds. This triumph of the biplane over the monoplane possessed some significance, and seemed to indicate that the greater wing surface of Harry's machine enabled it to be "banked" more steeply and consequently brought round on a shorter radius when turning.

Harry made several circuits of the aerodrome at 500 feet,

while testing the new Sopwith hydro-aeroplane, on the Saturday after Whitsun, May 17th, 1913, at Brooklands, preparatory to sea tests to be made at Cowes. On the Sunday, Lieut. Spencer Gray tested the Sopwith Tractor biplane, and all present were astonished by its remarkable climbing properties. In a wind of 35 m.p.h., Harry made several solo and passenger flights.

Sopwith and Harry were at Cowes during the following week, ending May 24th, testing the new hydro-aeroplane, which exceeded all expectations. Two more machines were approaching completion at the works, ready to be despatched to Brooklands for test.

It was proposed that on Saturday afternoon, May 31st, Hamel, Gordon Bell, Harry, and other well-known pilots should attempt a British Altitude Record, and also possibly a World's Record. Hamel would fly an 80 h.p. Borel monoplane, Gordon Bell the 120 h.p. Martin-Handasyde monoplane, and Harry the 80 h.p. Gnome Sopwith Tractor biplane. The Brooklands Automobile Racing Club offered a prize of £50 to anyone breaking the existing record of 10,650 feet, which stood to the credit of G. de Havilland.

The following extract from the official notices to members of the Royal Aero Club, issued under date June 7th, 1913, tells its own story:

"BRITISH HEIGHT RECORD.—The report of the flight made by Mr. H. G. Hawker at Brooklands on May 31st, 1913, together with barograph charts, were considered, and it was decided to accept the height accomplished—viz., 11,450 feet—as a British height record. The aircraft used on the occasion was a Sopwith Tractor biplane, fitted with an 80 h.p. Gnome."

It is interesting to note that de Havilland's record flight had been made with a passenger, and that it still stood as the record flight for pilot and one passenger.

Earlier in the day, before essaying to break the height record, Harry made the initial tests of another Sopwith Tractor biplane,

which proved equal to the prototype. Lieut. Spencer Gray also tested the machine for the Admiralty. When Harry set out on his record-breaking flight the wind had dropped and the sky was clear. Weather conditions were ideal, and the prevailing question was not "Will he break the record?" but "By how much will he break it?" The machine used was the one which had made the memorable ascent of 7,500 feet in 15 minutes, at Hendon, on the Saturday before Whitsun, and was in view of the onlookers throughout the whole flight.

The climb to 11,450 feet, which beat the existing record by 950 feet, occupied 45 minutes, and the gliding descent was accomplished in a fifth of that time. Harry would have been able to go higher had he not experienced difficulty in maintaining a good mixture, a circumstance which culminated in the carburetter freezing and rendered a descent imperative. On landing he was received with hearty acclamation and congratulations. With the winning of the previous altitude contest at Hendon and the Whit-Monday handicap at Brooklands, this flight constituted the third important success of the particular machine used, and Mr. Sopwith was congratulated on having such a first-class pilot as Harry Hawker to demonstrate the wonderful and surprising capabilities of the new Sopwith products.

Harry's height record of May 31st inspired "The Dreamer" to contribute to *Flight* the following, published on June 14th:

"BRAVO, HAWKER!

"I wish I could have been at Brooklands to have seen your smiling face when you came down from your lofty position. Your face always does me good when I gaze upon it. I suppose you sometimes feel a bit glum, like the rest of us, but I have never happened to be there to see it; and this time I am sure it would have acted as a tonic, as I am just a bit run down at the moment.

"That you have got a machine that can climb, and that you know how to handle it, I know. I only wish Brooklands

were more get-at-able so that I could see more of you and the others there. . . ."

At the week-end aviation meetings at Brooklands free passenger flights were generally balloted for by the spectators, and Harry frequently carried the successful participants.

Fresh from his triumph, Harry was out carrying passengers as usual on Sunday, June 1st. Once, while he was carrying two passengers, Gordon Bell was also out flying solo on an identically similar Sopwith Tractor, thereby enabling comparisons to be made. The general view was that the machine appeared to climb as well with the passengers as without them. On descending, Harry announced his intention of making attempts on the altitude records for one, two, and three passengers.

In a wind blowing at about 30 miles per hour, Harry was flying the two Sopwith Tractor biplanes at Brooklands on Sunday, June 8th. Among the several passengers whom he carried, up to 2,000 feet or more, was his friend Commander Samson, R.N.

On the Monday, Harry flew to the Isle of Wight and back, with a Mr. Boger as passenger. The outward and return journeys occupied 55 minutes and 50 minutes respectively, and a height of 5,000 feet was maintained.

CHAPTER IV

AMPHIBIANS—AND MORE HEIGHT RECORDS

An Amphibian of 1913—Harry Gets up to 13,000 feet with a Passenger—Several Other Height Records—Three Climbs in One Day—The Progress of the Sopwith Enterprise—Several Types of Aeroplanes—And Seaplanes—Harry Wins the Mortimer Singer Prize—And Has Time to Spare—A Friendly Race with Hamel—A World's Height Record—A Cross-Country Race—Preliminaries of the Round-Britain Seaplane Flight—Conditions Governing the *Daily Mail* £5,000 Prize.

CHAPTER IV

THE following is extracted from the official notices issued to members of the Royal Aero Club, under date June 7th, 1913 :

"MORTIMER SINGER £500 PRIZE.

"Mr. T. O. M. Sopwith is now ready to make the flight for this prize, and attempts will be made almost immediately. The course is on the Solent, and the official observers on behalf of the Club are Lieut. Spencer D. Gray, R.N., and Mr. J. N. Spottiswoode. The aircraft is a Sopwith Tractor biplane fitted with 100 h.p. Gnome engine. The pilot is Mr. H. G. Hawker. In this competition, six out and home flights have to be made on a course from a point on the land to a point out at sea, not less than five miles distant in a direct line, but the latter point shall not be less than one mile from any shore. Alightings have to be made on arrival at each point."

In short, Harry had been detailed to carry out pioneer work with the Amphibian type of aircraft, the initial development of which is popularly, but erroneously, supposed to have been the outcome of the prizes offered by the Air Ministry in 1919 for machines of this type.

Extracts from Royal Aero Club notices to members, under date June 21st, 1913 :

"MORTIMER SINGER £500 PRIZE.

"Intending competitors are again reminded that this competition is now open.

"Mr. H. G. Hawker on a Sopwith biplane has already made

one or two attempts, and will be going again as soon as some minor alterations to the aircraft have been completed. In giving the specification of the aircraft used by Mr. Hawker, an error was made in regard to the motor. The aircraft is fitted with a 100 h.p. Green."

"HEIGHT RECORDS.

"Mr. H. G. Hawker has been keeping the officials of the Club fairly busy of late. On Sunday last, with the Sopwith biplane, he made an attempt on the British Height Record with two passengers. The record of 8,400 feet stands to the credit of Major E. L. Gerrard, R.M.L.I. Mr. Hawker, however, managed to top the 8,000 feet but did not surpass the existing record. The following day, Monday, with another Sopwith biplane, he set out for the record with one passenger. The present official record is 10,560 feet, standing to the credit of Lieut. G. de Havilland. Mr. Hawker, according to the sealed barograph, attained a height of about 12,000 feet. After about half an hour's rest he decided to make another attempt on the two-passenger record, and on this occasion his barograph recorded about 10,000 ft.

"The barographs are now being tested, and the figures will be duly submitted to the Committee of the Club for official recognition.

"It is interesting to note that these three flights by Mr. Hawker were all made within 24 hours."

These altitude flights certainly bore great testimony to Harry's characteristic untiring energy. On the 16th, although it was a sweltering day, Harry, at 7,000 feet, was shivering, and at 12,000 feet he could scarcely move his limbs, so intense was the cold. With one passenger he reached 13,400 feet, rather more than the figure stated in the above notice, and with two passengers 10,800 feet, also exceeding the figure stated in the official notice. It is a point of interest that his record flight with one passenger beat

his own solo record of 11,450 feet, which he had made on May 31st.

When Harry made his attempt on June 15th, it was thought he had broken Major Gerrard's record for two passengers; and reports to that effect purported to show that a height of 8,580 feet had been attained, approximately 180 feet in excess of Major Gerrard's performance. Harry's passengers were Messrs. Dukinfield Jones and Simms, a young pilot who served in the Sopwith Works. The sky was absolutely cloudless and throughout the flight the machine was fully in view of the spectators, who marvelled at its beauty as it turned and re-turned with the sun glistening on its light wings. Engine trouble was responsible for the termination of the attempt, and, on landing, Harry was received with warm applause. He announced his intention of making an early attempt on the one-passenger height record (which he successfully accomplished on the following day, as recorded above).

A detailed examination of the various official notices and Press reports relating to the Mortimer Singer Competition points to considerable doubt having existed among those not actually on the spot as to the exact type of Sopwith machine employed. While it is true that in one case the inadvertence in announcing that the engine was a Gnome instead of a Green was officially acknowledged, in other cases such expressions as "Sopwith Tractor biplane" were misleading, in that they gave no indication as to the machine being a flying-boat, and not fitted with a tractor air-screw at that. While these points were of no material consequence, they do show the probability of a wide confusion having existed owing to the great variety of successful Sopwith machines; and, although it was before the war, the industry was reaching a state when the various machines could no longer be counted on the finger-tips. Seeing that Mr. Sopwith himself attributed the success of his enterprise in no small measure to Harry's genius, references to the progress of the Sopwith concern, such as the foregoing, are not out of place here.

Of the divers machines under construction at the Sopwith Works

during June may be mentioned a "gun bus" for naval use. This machine, propelled by two 120 h.p. Austro-Daimler engines, had a span of 80 feet. Then there were the 100 h.p. Green-engined twin-float hydro-aeroplane, designed for the *Daily Mail* Circuit of Great Britain; and the air-boat which won the Mortimer Singer Competition, as described above, also engined with the 100 h.p. Green. When this machine passed its first tests on the sea a wind of 40 miles per hour was blowing, and the sea was correspondingly rough. The machine differed from the original "Bat Boat" exhibited at the Aero Show in the previous February, in that a pair of inclined struts were introduced between the engine and the fore part of the hull. So effective was the hull in hydroplaning over the water, that the front elevator, a feature of the original "Bat Boat," was abandoned.

Then, during the month, a new Sopwith 100 h.p. Anzani-engined tractor hydro-aeroplane was tested by Harry and handed over to the Admiralty. The tests were passed very satisfactorily, the machine leaving rough water almost as quickly as the corresponding land machine left the ground. A speed of 68 miles per hour was attained, and the machine had particularly good climbing and alighting qualities. The machine was badly damaged immediately after being taken over by the Admiralty, a broken propeller and punctured float being the result of a collision with a mooring-buoy. The use of ailerons was now standard practice throughout the whole range of Sopwith machines, warping wings having been abandoned.

With such a variety of types, one can easily understand confusion arising from the circulation of brief reports stating that "Hawker, on a Sopwith biplane, etc. . . ." As for Harry, he was obtaining an unique experience in the handling and maintenance of several types of aeroplanes and engines.

In June, the Sopwith Aviation Company contemplated acquiring yet another skating-rink—at Surbiton this time—in order to cope with increasing orders. Over one hundred hands were now employed over a floor space of 60,000 square feet. Foreign

governments were sending over deputations, to whom Harry had the responsibility of demonstrating the airworthiness and efficiency of the Sopwith machines. The Sopwith Tractor biplanes were particularly in demand. Among the orders executed by the Sopwith Aviation Company during the summer of 1913 may be mentioned one of nine 80 h.p. Gnome-engined tractor biplanes for the Army and two similar machines for the Navy, all of which were tested by Harry at Brooklands.

In a Cross-Country Handicap over a 12-mile course in which Harry competed at Brooklands in June, he was too heavily handicapped to be any but an "also ran." The weather was ideal, except for a slight haze. Flying pupils, who took part in the race as well as instructors, probably scored advantageously in the handicapping. Harry's machine, the Sopwith Tractor, with so many records as were to its credit, could hardly be expected to escape with a slight handicap.

Harry captured the Mortimer Singer prize of £500 on Tuesday, July 8th, 1913, making, without any outside assistance, six out and home five-mile passenger flights (including a climb of 1,500 feet), alighting at each turning-point, on land or sea alternately. The flights were carried out at Southampton Water, on the 100 h.p. Green Sopwith flying-boat.

Extract from official notices to members of the Royal Aero Club, issued under date July 12th, 1913.

MORTIMER SINGER £500 PRIZE.

"News has just reached the Club of the success of the Sopwith Aviation Company in this competition. The pilot was Mr. H. G. Hawker, on a Sopwith Tractor biplane, fitted with 100 h.p. Green motor. The flights were made at Cowes on Tuesday afternoon, and the official observers of the Royal Aero Club were Mr. J. N. Spottiswoode and Mr. Howard T. Wright.

"The reports of the observers and barograph charts will be considered by the Committee of the Club on Tuesday next,

and if everything is in order the prize of £500, kindly presented by Mr. A. Mortimer Singer, will be awarded."

Extract from official notices issued to members of the Royal Aero Club under date July 19th, 1913.

"MORTIMER SINGER £500 PRIZE.

"The £500 prize, kindly put up for competition by Mr. A. Mortimer Singer, has been awarded to Mr. T. O. M. Sopwith, the entrant of the Sopwith biplane, which successfully accomplished the tests laid down in the rules. Mr. H. G. Hawker was the pilot of the aircraft, and the course was from a point on the land off Southampton Water to a point on the Solent, five miles away. Six out and home flights had to be made, alighting on arrival at each point. In each flight an altitude of at least 750 feet had to be attained, and on one occasion during the tests an altitude of 1,500 feet. The time allowed for the carrying out of the tests was 5 hours, but Mr. Hawker completed in 3 hours, 25 minutes.

"The following is the specification relating to the all-British aircraft used by Mr. Hawker :

"Sopwith Biplane. Motor, 100 h.p. Green ; Carburetter, Zenith ; Magneto, British Bosch ; Sparking-plugs, British Bosch ; Propeller, Lang.

"In addition to the prize of £500 to Mr. Sopwith, Mr. A. Mortimer Singer is kindly presenting Mr. H. G. Hawker with a souvenir."

The R.Ae.C. notices of July 12th, 1913, also contained the following :

"DAILY MAIL £5,000 PRIZE : CIRCUIT OF GREAT BRITAIN.

"The following entry for the *Daily Mail* £5,000 Prize, Circuit of Great Britain, has been received :

The Sopwith Aviation Co.

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“Intending competitors are reminded that the entries close on July 16th, 1913, at 12 noon.”

On Saturday, July 13th, 1913, Harry fresh from winning the Mortimer Singer prize on Tuesday, was out testing a novel but useless idea in propellers on the Sopwith Tractor at Brooklands. Two penalties of fame which Harry had to pay on not a few occasions during his career were posing for photographers and testing inventions for all and sundry.

After testing a new tractor biplane fitted with ailerons, on Sunday, the 13th, Harry engaged in a friendly race with Hamel, who was flying a two-seater Blériot monoplane. Both machines had 80 h.p. Gnome engines. Although there was some doubt as to who really won the race, that Harry displayed the superior efficiency of the Sopwith biplane over the exactly similarly engined monoplane was beyond dispute.

Harry made a world's record for height with three passengers on Sunday, July 27th, 1913, on the 80 h.p. Gnome-engined Sopwith Tractor biplane. On this occasion the weather was inclined to be hazy, and in a preliminary test flight Harry lost sight of the aerodrome at 1,500 feet, but from the ground he was plainly discernible, and spectators were amused by watching him circling around trying to find his bearings. Although it was rather windy, he carried one or two passengers early in the afternoon, and it was shortly after 5 o'clock, when the wind had dropped somewhat, that he decided to attempt to break the world's record for altitude with three passengers. His passengers, Messrs. Bellew, Jones, and King, were all of at least average weight.

A few minutes past six the record-making flight began, and after making two or three circuits of Brooklands, Harry was out of sight, forcing his way upwards through clouds at 3,000 feet. At 8,400 feet, having made a world's record, and being ignorant of his whereabouts, he decided to come down, although the machine could have climbed another 2,000 feet with comparative ease.

On August Bank Holiday, Harry, on an 80 h.p. Gnome-engined

Sopwith Tractor biplane, was one of three competitors who lined up for the start of an Aeroplane Handicap at Brooklands. The other competitors were Alcock on the Parsons biplane (70 h.p. Gnome), who had 3 minutes 30 seconds' start from Harry, and Merriam on a 50 h.p. Bristol biplane, who has 6 minutes 14 seconds' start. The start of the race was delayed through Alcock and Champel, the latter on a biplane of his own design, coming into collision while "taxi-ing," owing to the strong gusty wind which prevailed. The Frenchman's biplane was damaged beyond repair in time for the race, but Alcock's machine only required a new propeller, which was fitted in the space of ten minutes or so.

Fate, however, was sadly opposed to Alcock, for during the first circuit he was obliged, through defective aileron controls, to land in a neighbouring field, where, owing to the roughness of the ground, his machine turned a complete somersault. He was unhurt, and having regard to the nature of the crash, the damage, consisting of a broken propeller and a broken chassis strut, was very slight. As I write, I recall a discussion that once took place on the subject of the life of a propeller, and this case of two propellers being annihilated within an interval of a few minutes after one had replaced another on the same machine seems significantly applicable.

After an exciting race, Merriam and Harry completed the course, the latter winning by 45 seconds.

In the intervening days prior to August 16th, Harry was more or less fully occupied in making preparations for the classic *Daily Mail* Seaplane Circuit of Britain. On August 7th, 1913, with the whole aeronautical fraternity, he shared profound grief at the death of S. F. Cody—the hardest blow that British aviation had ever received. Although Brooklands was fairly busy while Harry was away in the seaplane race, the activities at the Sopwith sheds were to all intents and purposes nil. The attention of everyone connected with the concern was turned to his flight and doing everything possible to make its outcome successful.

Entries for the *Daily Mail* Seaplane Race were timed to close

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on Wednesday, July 16th, 1913, and after that date until August 1st late entries were accepted at an increased fee of £150. When the list finally closed the entrants were: T. O. M. Sopwith, S. F. Cody, James Radley, and F. K. McClean. Cruel fate eliminated poor Cody on August 7th. Radley, who, with Gordon England, was experimenting with a large and ingeniously-concocted seaplane propelled by three Gnome engines arranged in tandem, withdrew from the race, presumably because his machine was purely in experimental stages. McClean, who had entered a machine bearing the famous British hall-mark of Short Brothers, was dogged by ill-luck through engine trouble and never made a start, although no effort was spared in trying to get the machine in tune for the long flight. In the end, only Harry and his faithful mechanic and compatriot, Kauper, were left to try and win that £5,000 so generously offered by the *Daily Mail*, and, what was probably more important, to put up an interesting show and draw widespread public opinion to the importance of Britain acquiring and maintaining an aerial prestige akin to her maritime traditions.

The competition opened on August 16th, 1913, and within 72 consecutive hours competitors had to fly over a circuit of 1,540 miles, starting and finishing on Southampton Water, *via* Ramsgate, Yarmouth, Scarborough, Aberdeen, Oban, Dublin, and Falmouth, landing in prescribed areas on the sea at each of these points, or "controls," for the purposes of identification. The competition was conducted for the proprietors of the *Daily Mail* under the auspices of the Royal Aero Club, whose organisation of the contest was most thorough and effective. The competition was open for a fortnight. In other words, competitors could attempt the flight in any 72 consecutive hours between August 16th (6 a.m.) and August 30th (6 p.m.) inclusive, no flying taking place on Sundays, which would not be included in the time limit. Thus competitors could fly on Saturday, rest on Sunday, and finish on Monday and Tuesday. The entrant and pilot, or pilots, were required to be of British nationality and duly

entered on the Competitors' Register of the Royal Aero Club, pilots having to be holders of an aviator's certificate issued by the Royal Aero Club or other club affiliated to the Federation Aeronautique Internationale. A passenger had to be carried throughout the flights, and the combined weight of the pilot and passenger must not be less than 264 lbs., any deficiency in this respect being made up by means of ballast, such as bags of sand. Entrants were permitted to change the pilots or passengers during the contest.

The complete aircraft and all its component parts, including the motor, had to be constructed within the confines of the British Empire, although this provision need not apply to raw material or the magneto. Entries nominally closed on July 16th, one month before the date appointed for the start of the competition. The entrance fee was £100. Late entries could be made up to August 1st at an increased fee, as mentioned above. No part of the entrance fees was required by the *Daily Mail*, all amounts received being applied towards payment of the expenses of the Royal Aero Club in conducting the competition, any balance not so expended being returnable to the entrants after the competition.

Competing machines had to remain for one hour in each of the controls, and during the first half-hour of each such "rest" had to be entirely at the disposal of the Royal Aero Club officials for examination. During the second half-hour replenishments of fuel and repairs could be made. These periods of one hour at each of the control points *en route* were not counted within the prescribed 72 hours. Any number of starts could be made from the official starting-line at Southampton Water, under the supervision of the responsible officials.

Stoppages between the controls were not against the rules, but all alightings had to be effected on the sea, an inlet of the sea, an estuary, or a harbour. There was, therefore, no special scope for amphibians in this competition, as an alighting on land or inland water was deemed a disqualification. Alightings on

the Caledonian Canal and towing anywhere were not prohibited, but the finishing-line had to be crossed in flight. The short time limit of 72 hours did not permit one deliberately to take advantage of this concession by covering the whole course in tow! Individual replacements and repairs to the aeroplane and engine could be made *en route*, but neither could be changed as a whole. To make such repairs and replacements, the machine could be taken ashore, but all the time so expended, outside the half-hour allowed at the controls, counted as flying time. Five parts of the aeroplane and five parts of the motor were officially sealed, and at least two such seals of each five had to be intact on arrival at each control. The machine had to be delivered completely erected at a place appointed by the Royal Aero Club at Southampton, and handed over for the purpose of being marked and sealed, at least 24 hours before a start was to be made. No marks or seals were to be made after the original marking made preparatory to an attempt. Each competitor was supplied with a time-card, or "pay-bill," which had to be signed by the responsible official of the Royal Aero Club at each control, and competitors were held solely responsible for the safe custody of this card.

Competitors were required to be equipped with lifebelts or other appliances for keeping afloat. One useful provision made by the Royal Aero Club was free shed accommodation at the starting-point from one week prior to the opening of the competition until the closing date.

CHAPTER V

FIRST ATTEMPT TO FLY ROUND BRITAIN

The Task of the Flight Round Britain—And the Machine for the Job—Public Interest in the Pilot—"Good Luck!"—The Night Before the Start—A Mayor's Early Call—And the Sequel—The Scene at the Start—To Ramsgate at Sixty Miles per Hour—An Aerial Escort—The Ramsgate Cup—Fog in the Thames Mouth—To Yarmouth in Next to No Time—Harry Collapses—Pickles Relieves Him—And Meets with Misfortune—Starting All Over Again.

CHAPTER V

BEFORE the start of the Seaplane Circuit of Britain considerable doubt was expressed as to whether or not the competitors would be able to complete the course in the 72 hours allowed. That the task would not be easy was gauged from the fact that an air route following a coast-line is by no means a desirable one, seeing that fog is apt to congregate there, and the proximity of cliffs promotes a tiresome, and perhaps treacherous, "bumpiness" in the air. In these respects the essaying of a flight of 1,500 miles round the coast probably involved a more severe trial of pilot and machine than a flight across the Atlantic Ocean.

That recreative contributor, "The Dreamer," in *Flight*, July 26th, 1913, wrote :

"As the time for the start of the Round Britain race draws near, I am given to wondering what the result will be : whether any one of the four pilots who have entered will get through within the time. It is possible, of course, that one or even more may do so, but it is to be a great fight and the adventures are likely to be many and varied. Flying has progressed considerably since the last circuit of Britain, and taking into consideration the long-distance flights now made almost weekly, it would hardly be safe to prophesy entire failure. However, to take an aeroplane round the coast of England and Scotland, with a call at Ireland, is no child's play, and should luck be against our brave pilots and they fail to complete the course in the time allowed, or even do not get round at all, they will yet have done an infinite amount of good to aviation. The mere fact that they have entered at all, and that they have

faith in the machines they fly to accomplish such a journey, is most praiseworthy, especially when it is borne in mind that at least three out of the four are flying machines of their own design and construction, and the fourth, although he cannot quite be bracketed in these conditions, has a very high place in the realms of aviation. The more so, that he is an amateur enthusiast first and last. Given suitable weather, I should not be greatly surprised, and should be immensely pleased, to hear that all four had completed the course. Should any one of them manage it in the stipulated time, aviation, including the building of English engines, should receive a fillip the value of which is almost incalculable. Messrs. McClean—Cody—Sopwith—Radley, here's good luck to you; your pluck is appreciated in the whole world of aviation."

The machine which Harry piloted in the Round Britain Seaplane Circuit was of the tractor type. Indeed, its design and construction followed the lines of the standard 80 h.p. Gnome-engined tractor biplane which had been doing so well previously, necessary modifications being introduced to suit the 100 h.p. Green engine and floats provided in place of the land chassis. These modifications gave the fuselage, or body of the machine, a more tapered nose than the land machine and perhaps a prettier appearance. It was the success of his tractor biplanes that prompted Sopwith to enter a machine of this type in preference to one of his Bat Boats. Kauper's seat was in front of Harry's, and the control was by a wheel mounted on the "joy-stick," rotation of the wheel operating the ailerons, or lateral balancers, and a fore-and-aft movement of the lever working the elevator. The rudder was operated by the orthodox foot-bar. The petrol-and oil-tanks, each holding 45 and 10 gallons respectively, were installed under the passenger's seat about the centre of gravity, so that as the fuel and oil was consumed Harry felt no extra strain on the controls, which would have been the case had the machine not been so balanced. By kind permission of the proprietors of

Flight I am able to reproduce the following from a description of the machine, which appeared in their journal on August 16th, 1913.

"Having already achieved such remarkable success with his tractor-type land machine, Mr. Sopwith decided to enter a biplane of this type, fitted, of course, with floats instead of wheels, for the *Daily Mail* Race Round Britain, in preference to one of the Bat Boat type, and, in consideration of the large open stretches of sea which have to be negotiated, we are inclined to think that he has chosen wisely.

"In its general outlines, this machine possesses the same smart, business-looking appearance which characterises the land machines, further enhanced, perhaps, by the tapering nose of the fuselage, allowed of by the installation of a 100 h.p. six-cylinder vertical type British Green engine, instead of the 80 h.p. Gnome motor with which the land machines are usually fitted. The fuselage, which is of rectangular section, is built up in the usual way of four longerons of ash, connected by struts and cross-members. In the rear part of the body these are made of spruce, while in front, where the weight of the pilot, passenger, and engine is concentrated, and where, therefore, greater strength is required, these members are made of ash. The main planes, which are very strongly built over main spars of solid spruce of I section, are slightly staggered, and are also set at a dihedral angle in order to give the machine a certain amount of lateral stability. From a point just behind the pilot's seat back to the rudder-post the fuselage is covered in with fabric, whilst the front portion is covered with aluminium, forming on top of the nose of the fuselage a very neat and cleanly designed cover over the motor. . . .

"The main floats, which have been built by the Sopwith Aviation Company, are of the single-step type and are built up of a framework of ash and spruce covered with a double skin of cedar. Two bulkheads divide the floats into three watertight compartments, so that should a float become damaged, causing one compartment to leak, the other two

would still have sufficient buoyancy to prevent the float from sinking very deeply into the water. Two pairs of inverted V struts connect each float with a lower main plane, while another pair of struts running to the front part of the fuselage help to take the weight of the engine. Spruce is the material used for chassis as well as plane-struts, the latter being hollowed out for lightness.

"Inside the comparatively deep fuselage, where ample protection against the wind is afforded to pilot and passenger, are the two seats, arranged tandem fashion, the pilot occupying the rear seat. In front of him are the controls, which consist of a rotatable hand-wheel, mounted on a single central tubular column. Rotation of the wheel operates the ailerons, which are fitted to both top and bottom planes, and which are interconnected. A fore-and-aft movement operates the elevator, while a footbar actuates the rudder. It should be noticed that the control cables are only exposed to the effects of the air and salt water for a very short length, the elevator cables entering the body just in front of the fixed tail-plane and the rudder cables a couple of feet from the rudder-post. The engine is supplied with petrol and oil from tanks situated under the passenger's seat, the capacity of the tanks being 45 gallons and 10 gallons respectively.

"For the purpose of easy egress in case of a smash, the centre portion of the top plane has been left uncovered. In order to minimise end losses due to the air leaking out of the opening thus produced, what might be called baffle-plates have been fitted to the inner ends of the wing. These baffle-plates have been made streamline in section, as it was found that an ordinary thin board would bend owing to the pressure of the air trying to escape past it. With full load of fuel and passengers on board the weight of the machine is 2,400 lbs., and her flying speed is 60 to 65 m.p.h."

Before the start of the Round Britain Seaplane Circuit

Harry was inundated with messages from unknown correspondents, and, in order to be spared the attentions of the public, he stayed aboard a yacht while not tending his machine.

As a starting and finishing base for the Seaplane Circuit, the Royal Motor Yacht Club very kindly lent to the Royal Aero Club their floating club-house, the *Enchantress*. Among those on board on the occasion of the start were Sir Thomas Lipton, Colonel Holden, C.B., Commander Cummings, Major Lindsay Lloyd, Major Stephens (secretary of the Royal Motor Yacht Club), Captain Robinson, the Mayor of Southampton, the Sheriff of Southampton, Mr. and Mrs. James Valentine, Mr. W. B. R. Moorhouse, Mr. J. H. Ledebor, Mr. Thomas Marlowe (Editor of the *Daily Mail*), Mr. Hamilton Fyfe, and Mr. Harold E. Perrin (secretary of the Royal Aero Club). Prior to the race, Harry's machine was stationed on the Medina River at Ryde, where on Friday the 15th, the day before the race, the officials proceeded to mark the various components of the aeroplane in due accordance with the rules of the competition.

The intensity of the interest aroused by the Round Britain Seaplane Race may be gauged by the fact that on the morning before the start of the competition the passengers on one of the Cowes-Portsmouth steamers loudly cheered, and cried "Good luck!" to Mr. Sopwith as they passed him on his yacht *Ceto*, which was anchored near the *Enchantress*. In an aside to a friend while acknowledging the cheers, Mr. Sopwith said he only hoped no one would wish Harry good luck. Every time he had done that during the Mortimer-Singer Competition he had failed. The last time he had not done it, and Harry won. In none of the big things which Harry had done had he received a good wish from him.

Harry and Mr. Sopwith had a big talk at the hangar before parting on Friday night, and one read in the newspaper on Saturday morning of "the owner giving his jockey the last instructions."

Hopes were particularly high in the Sopwith bunks on Friday night when a fresh southerly breeze sprang up, for it was realised

that such a wind on the morrow would greatly help Harry after he had passed Dover. But the glass remained high. Fog would be the greatest danger, and if only sufficient wind would rise to blow it away, all would be well.

The race was originally scheduled to begin at 6 a.m. on Saturday morning, August 16th, but late on Friday night the start had to be postponed until after 10 a.m., as it was found that the shed in which the machine was housed made it practically impossible for the machine to be launched until high tide. It was hoped, too, that the delay would enable McClean to bring his Short machine along in time to start with Harry and provide the added excitement of a neck-to-neck race. Those who were privileged to enjoy the hospitality of the *Enchantress* overnight were delighted with the prospect of a good night's rest without the necessity of breakfasting at an unearthly hour in time to witness a 6 a.m. start.

Nevertheless, at 5 a.m. one heard voices diligently enquiring for Mr. Perrin, the secretary of the Royal Aero Club, and a general commotion and clamour seemed to be in progress on the gangways and in the corridors outside the cabins. A little bird told that the Mayor of Southampton, who through having retired early had not received notice of the postponement of the start, announced late on Friday night, came on board the *Enchantress* before 6 a.m. in full regalia, to be greeted by the secretary of the Royal Aero Club clad in plebeian pyjamas. The outcome of all this was that most people got up and had a 6.30 "brekker," while a Sopwith Bat Boat and a Borel hydro-monoplane, carrying out evolutions in naval hands, relieved to some extent the monotony of the few hours pending the time when Harry would be ready to start. The water was remarkably calm and the day bright and sunny. Any wind that was rising came from the south, and would obviously be an aid to Harry in traversing the East Coast.

At about 11.30 Harry arrived on the scene with his machine, and landed a considerable distance from the *Enchantress*, about midway between it and the shore. A medley of racing yachts,

motor-boats, steamers, and boats put out to meet him, and after about ten minutes these were seen to draw away—a sign that Harry was about to start.

The scene as Harry and Kauper were starting up their engine was inspiring. The sunlight dancing on the water, the throngs lining the Netley shore, the countless mastheads with their pennants, all combined to make a charming spectacle. From 5 a.m. thousands of people had been lining the shore and sojourning in boats to see the flight begin. Just before the start, Mr. Sopwith, Mr. Perrin, and other officials gave Harry his final instructions from a motor-boat. With a "Right—thanks!" Harry put in his breast-pocket the official landing-cards handed up to him by Mr. Perrin. Somebody in a yacht cried out, "Good-bye, Hawker! Good luck!" which must have moved Mr. Sopwith to tears if he heard it.

At 11.47 a.m. on Saturday, August 16th, 1913, Harry rose from Southampton Water, and after disappearing from sight past Calshot and passing over the Solent, he sped off for the open sea. Before most people had realised that a great attempt to defeat the elements had begun, he was out of sight.

A very true description of the start was given by Mr. H. Hamilton Fyfe of the *Daily Mail*, in which he said:

"The morning was perfect. The sunshine made the landscape glitter in a warm glory of light. The southerly breeze tickled the surface of the water into sparkling ripples—the 'smiles without number' of summer. A wind had come up out of the sea and said, 'Oh, mist, make room for me!' The coastline was clear. The Isle of Wight shimmered well within view. This had been the weather from the early hours, and it was a great pity the intention to leave at six was not carried out—a pity I mean from Mr. Hawker's point of view. The delay was by everyone else hailed with joy. 'Oh, it's nice to be up in the morning, but it's nicer to stay in your bed,' sang Sir Thomas Lipton, quoting Mr. Harry Lauder's song, and everyone

sat up later than usual because there was no need to cut short the hours of bed.

"The reason for the delay was twofold. At the last moment the compass in the machine was found to need adjusting, and also it would have been necessary to put the waterplane into the Medina River from its shed between 1 and 2 a.m. 'I need a good night's rest before I start,' Mr. Hawker pleaded, and so it was settled that he should wait for another tide. The telephone was kept busy announcing the postponement, but unfortunately there were many people who could not possibly hear of it.

"As soon as Mr. Hawker dropped into the water between the *Enchantress* and the shore, Mr. Perrin went out to give him a copy of the final rules and regulations and to take the exact time of his start. The pilot and his passenger, young Kauper, had no elaborate flying-suits on. Their coats and caps were of rough waterproof canvas, but they wore their ordinary trousers and boots. They might have been doing an every-day practice flight. 'Have you got any grub with you?' I asked them. 'No,' they said. 'Can't be bothered. We'll get it at the stopping places.'

"Nothing in their manner, save a little suppressed excitement, betrayed by a slight huskiness of voice, suggested that they were starting on an attempt to fly 1,600 miles over sea almost straight on end. I suppose the thought, 'How foolish and unnecessary,' was in the Oriental minds of a party of lascars in a launch who were being taken up to Southampton from the troopship *Rohilla* lying close by. They hung over the side to see as much as they could of this latest invention of the 'white mad folk,' but I know every English man and woman there heartily admired the two Australian boys for their nerve and skill.

"A GREAT DAY.

"As they made their last preparations I saw as in a moving

picture kaleidoscope the scenes of the starts in earlier *Daily Mail* flying contests. I saw Louis Blériot in the field behind the beach at Baraques, near Calais, setting off at sunrise across the Channel and asking just before he started, 'Where is Dover?' I saw Grahame-White pelting off from Wormwood Scrubbs at six o'clock in the evening and vainly chasing Paulhan, who had got away from Hendon an hour before. I saw Brooklands in that hot afternoon when one after another the machines entered for the Circuit of Britain rose and sailed away to the delight and amazement of the huge crowd.

"The actual letting go was unemotional. Ours was the only boat close by. There was a clear path for the start. The crowds were too far away to cheer. Exactly at 11.47 the motor began its rattling din and the machine moved off without difficulty, foamed along over the water, and leapt suddenly into the air. Gradually, as he went down towards the Solent, Mr. Hawker climbed up to a good height. He was watched with intense sympathy until he disappeared into the sky. Then everyone heaved a deep sigh of satisfaction and said, 'Well, it has been a great day.'"

"The two naval airmen, Lieutenant Travers and Lieutenant Spencer Gray, were to have convoyed him as far as Ramsgate, but to the grim amusement of Mr. Green, inventor of the air motor used by Mr. Hawker, and of Mr. Fred May, managing director of the company, both their foreign engines had broken down. The Gnome in the Borel machine was repaired by the afternoon, but the Austro-Daimler in the 'Bat Boat' had something seriously wrong with it, and Lieutenant Spencer Gray had to tow his waterplane to Calshot as evening fell."

Seen from the *Enchantress*, Harry's machine appeared to the special correspondent of the *Daily Mirror* as a big dragon-fly chased by a crowd of angry little water-beetles. At times it seemed that the "beetles," sending up clouds of spray, would overtake their quarry, but the "dragon-fly" shot ahead

desperately; and suddenly, as though it had just found the use of its wings, leapt out of the water and soared up gloriously into the air. The motor-boats snorted and grunted at this sudden manœuvre, slowed down their engines and abandoned the chase!

The first stretch to Ramsgate was 144 miles; the next to Yarmouth 96 miles; and the third to Scarborough 150 miles. To have any reasonable chance of completing the whole course in the appointed 72 hours, Harry realised that he would have to get at least as far as Scarborough on the first day. His delay in starting after 10 a.m. was due to difficulty in adjusting the compass, which had to be done, as he would require it in negotiating the mist and fog hanging about the Solent and the Thames Estuary. Assuming that he would reach Scarborough on Saturday, he expected to cover the 446 miles from there to Oban on Monday; on Tuesday he would make Dublin, 222 miles distant from Oban, and proceed on to Falmouth, a further 280 miles, leaving the final stretch from there to Southampton to be completed on Wednesday, on which day his time would be up at 4 p.m.

Having reached the open sea, Harry, keeping well out from the land and maintaining a steady height of about 1,000 feet, followed the South Coast, and was seen by numerous holiday folk at Brighton, Eastbourne, Folkestone, and Dover, which he passed in good time.

After rounding the corner of England he was assisted by the light southerly wind. The first control, Ramsgate, 144 miles from the start, was reached at 2.11 p.m., an average speed of 60 miles per hour having been kept up. While passing Margate, Harry saw a Blériot monoplane rising to greet him. This was M. Salmét, who was giving exhibition flights at Margate. Harry and Kauper enjoyed his company for a few minutes while he flew along beside them. On arriving at Ramsgate, they were welcomed by the Mayor (Alderman Glyn) and members of the Corporation, the Mayor, speaking through a megaphone, announcing that they had won the Cup offered by the townspeople to the first competitor arriving at Ramsgate. Ramsgate was

en fête with much bunting, and crowds were there from Deal, Dover, Broadstairs, Margate, Canterbury, Whitstable, and all the villages for miles around, thronging the shore, piers, harbour, and every point of vantage. Local coastguards acted as patrols in two motor-boats, to keep the official control area clear. Mr. Thomas and Mr. Ramsden Tagore, members of the Royal Temple Yacht Club, lent their craft to the Royal Aero Club. At 3.2, the Aero Club officials having inspected the machine and handed to him a clean waybill with which to proceed, Harry started his engine and began the second stage to Yarmouth. Crossing the mouth of the Thames, he was unable to see either bank owing to the fog, and, steering by compass, he proceeded northward, afterwards passing Walton-on-the-Naze and Clacton, at which places holiday crowds enjoyed a passing glimpse of the machine in the distance, flying strongly.

Those who have made the tedious journey by steamboat from Yarmouth to London, taking the greater part of the day, will particularly appreciate the marvel of travelling all along the coast-line from Southampton to Yarmouth in less than five hours, including a rest of one hour at Ramsgate. At Yarmouth Harry and Kauper were received with an enthusiastic welcome at 4.38 p.m. At the time of landing, Harry was feeling quite fit, but soon after he had been rowed ashore he collapsed. He had been troubled by the gases escaping from the rather short exhaust-pipe, and this, coupled with the fact that, as Kauper reported, the sun had been very trying, and Harry had not worn any goggles, led to the case being diagnosed as sunstroke aggravated by the conditions under which he had been flying. I am inclined to think that his actual breakdown was completed by the change of conditions from piloting the seaplane to being rowed ashore in a small boat, and it was a lucky circumstance that this temporary breakdown was not deferred until he had taken the air again.

The following communication from a special correspondent of the *Evening News*, published on Monday, August 18th, 1913, sheds some light on the circumstances :

“YARMOUTH, *Monday.*

“The hope expressed by Mr. Sopwith that Mr. Hawker may have recovered sufficiently to make a fresh start from Southampton this week is based on the opinion of the doctor attending the airman. His view is that Mr. Hawker should be quite fit again in a couple of days.

“The doctor tells me that no specific cause can be assigned as the reason of the airman's breakdown.

“It is, he says, a general accumulation of nerve strain, lack of rest, and, on top of it all, Saturday's hot sun.

“Mr. Hawker's breakdown was most dramatic. When the machine came to rest on the water he hopped out of the seat, and, standing on the floats, was active in directing the disposition of the machine.

“‘Be ready to fill her up,’ were his words on leaving her.

“I walked up the beach with him to the officers' quarters. ‘Fit as a fiddle,’ was his own phrase, and though grimy and travel-stained, he looked fit.

“Suddenly a change occurred. He passed his hand wearily over his eyes, and his whole complexion changed.

“The room was speedily cleared, a draught was administered by the doctor, and a cold compress applied to the forehead, but it was apparent to onlookers that he could not possibly go on.

“Indeed, Lieutenant Gregory tells me that had Mr. Hawker essayed to do so he should have put his official veto on the attempt.”

The fact that Yarmouth was one of the controls proved to be one of the big local attractions of the season, and people flocked in from all parts of Norfolk and Suffolk. Lieutenant Gregory, R.N., who was in charge of the East Coast Naval Air Stations, spared no pains in perfecting the local organisation. The control area was a triangle, of which the apex was the familiar lightship which faced the Naval Air Station. The Mayor of Yarmouth,

Mr. Westmacott, personally assumed responsibility for keeping the control area free from intruding boats.

When they landed, Harry and Kauper were very deaf from the incessant roar of the engine during the flight, and their friends had to shout their loudest to make themselves heard.

As soon as it was found to be out of the question for Harry to proceed with the flight, Mr. Sopwith at once took steps to find a pilot to assume control of the machine and carry on the work which Harry had so well begun. Through the kindness and sportsmanship of Messrs. Short Brothers, he was able to engage the services of their pilot, Mr. Sydney Pickles—like Harry, an Australian. The *Daily Mail* not expecting pilots to fly on Sunday was a fortunate circumstance which gave Mr. Sopwith all the time needed to get Mr. Pickles on the scene by Monday morning without sacrificing flying time or having his new pilot tired out before the start.

At 5.30 a.m. Pickles with Kauper made a determined effort to get away, but the sea was too rough, and there was nothing to do but switch off the engine and be taken in tow. This was just as well, as subsequent reports showed that much rougher seas were running at Scarborough, the next control, where the buoys marking the official control area were washed away.

But troubles were by no means at an end when Pickles switched off and waited for help. Propelled by a strong northeasterly wind, the machine drifted southward from a point north-east of the St. Nicholas Lightship, past the harbour entrance, down to Gorleston Bay, where, after being taken in tow by a rowing-boat, the machine was beached. An examination of the machine as it lay on the shore at Gorleston showed that, in spite of the buffeting it had received, very little damage had occurred. The elevator and one of the floats were damaged. As Mr. F. Sigrist, the works manager of the Sopwith Aviation Company, said at the time, the incessant bump of the water, which was on that morning about as soft as concrete, was sufficient completely to break up a good many machines.

After breakfast Mr. Sopwith, Mr. Sigrist, Mr. Pickles, and Lieutenant Gregory held a conference, principally to decide whether or not the machine should be sent back to Southampton by air. After much discussion, which resulted in such a division of opinion that the toss of a coin was resorted to as the deciding factor, the machine was dismantled and sent back to Cowes by rail to be ready for a second attempt. The railway companies were very obliging in providing facilities for rapidly transporting the machine in time for it to be re-erected and to make a fresh start to accomplish the whole circuit before the close of the competition. One cannot help expressing sympathy for Mr. Pickles in being robbed by a heavy sea of his eleventh hour opportunity of participating in the flight.

In the meantime, Messrs. Short Brothers and Frank McClean, with the assistance of Mr. Fred May, of the Green Engine Company, got their machine into serviceable trim, and hoped to fly to Southampton on the following Thursday evening, to be in readiness to make a start on the Friday, but owing to radiator troubles they were forced eventually to abandon the contest.

CHAPTER VI

SECOND ATTEMPT TO FLY ROUND BRITAIN

Harry Recovers—And Takes Charge Again—An Early Start—Almost Unseen by the Starter—Thick Fog—Behind Time at Ramsgate—An Explosion—A Favourable Breeze—But Bumpy Air off Cromer—Scarborough—A Forced Landing—Five Hundred Miles in a Day—Resting at Beadnell Overnight—The Second Day—A Spiral Glide at Aberdeen—A Terrible Journey to Oban—The Third Day—A Water-Logged Float—Another Forced Landing—Ireland—"A Piece of Ghastly Bad Luck"—Kauper Goes to Hospital.

CHAPTER VI

By Thursday, August 21st, 1913, Harry had made good progress towards recovery, and expected to be ready to make a second attempt on Saturday, August 23rd, exactly a week after his first effort. Pickles held himself in readiness in case Harry should still be unable to proceed. However, by Monday morning, the 25th, Harry had completely recovered from the effects of sunstroke and the exhaust gases, and a start was made at 5.30 a.m.

Public interest was not lacking through his being the only competitor. As a matter of fact, the previous failure served to enhance the appreciation of the difficulties with which the aviator had to contend on such a journey. The physical trial was dramatically revealed through the pilot's collapse at Yarmouth on August 16th, and in the second attempt a special sporting touch was introduced by the doubtful possibility of his getting further or not so far, which more than compensated for the absence of other competitors to provide a neck-to-neck race.

Harry tested the machine on Saturday the 23rd, and was well satisfied with everything. The engine had been muffled by the fitting of a longer exhaust-pipe. Although at dawn on Monday the atmosphere was bright and clear, a thick mist rolled up, and as Harry, this time making a flying start, passed above the starting-line punctually at 5.30 a.m., only a fleeting glimpse of the machine was enjoyed by those aboard the *Enchantress*, as she sped overhead.

Nevertheless, in the Solent Harry found the weather clearer than on the other occasion, but in the Channel he met with a good deal of fog and had to rely on his compass several times while skirting the South Coast. He was wearing helmet and goggles and running no risk of sunstroke this time. Seeing that

he and Kauper had been over this stage of the course only a week before, he hoped they would reach Ramsgate in slightly better time, but the fog was against them, and it was not until 8.8 a.m. that they alighted at Ramsgate, having taken 159 minutes from Southampton, or 15 minutes longer than when they made their first attempt. They expected to sacrifice a little speed through the provision of the longer exhaust-pipe, which would offer a slight additional resistance to the free passage of the burnt gases from the engine.

Exactly one hour afterwards Harry started for Yarmouth. Between Ramsgate and Southwold they were practically out of sight of land all the time, so dense was the fog. A curious incident, which happily had no serious consequences, befell them while they were crossing the Thames mouth. Kauper accidentally switched off the engine. His switching on again was accompanied by a loud explosion in the streamlined exhaust-pipe, due to the unburnt charge taking fire. The pipe was deformed from a streamlined to a circular section, but otherwise no damage was done, and there was no necessity to alight. Kauper felt the effects of the exhaust gases a little, but Harry was as fit as a fiddle.

Yarmouth was reached at 10.36 a.m., the 96 miles from Ramsgate having been traversed in 1 hour 28 minutes through the aid of a southerly breeze. Mooring their machine, Harry and Kauper went on board the boat of an Australian friend, Mr. A. Williamson, where a short rest and a meal were enjoyed. Before leaving, they were presented with a sprig of Australian eucalyptus as a memento. Kauper was feeling the strain of the flight, but not severely enough to prevent his proceeding. The official inspection had been completed quickly, but one or two minor adjustments necessitated their spending a whole hour at Yarmouth.

At 11.44 they were well under way for Scarborough, 150 miles distant. There was still much fog about, and off Cromer the air was particularly bumpy. After relying on the compass during the greater part of the journey, and flying at a steady height of 1,000 feet, they reached Scarborough at 2.42. The town

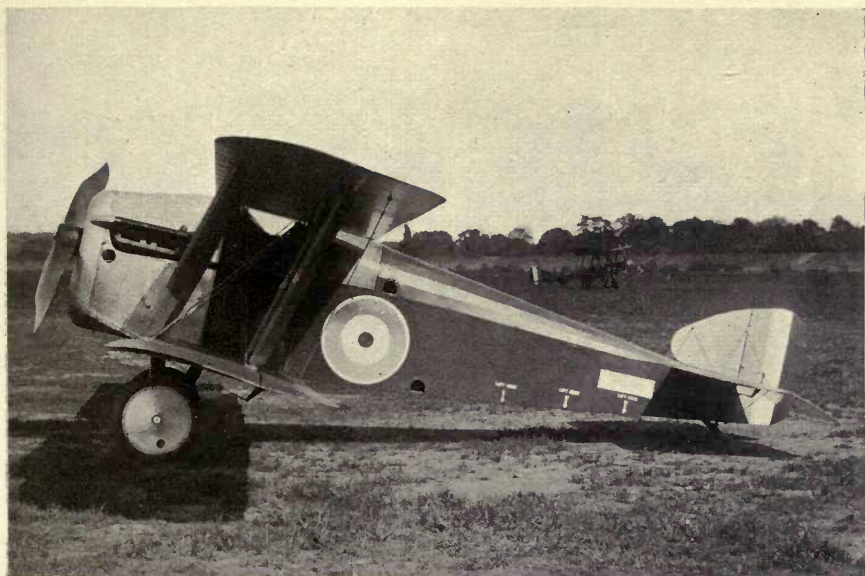


Photo by]

[J. Cecil Gould, Weybridge.

THE SOPWITH DOLPHIN, PUT THROUGH ITS INITIAL TESTS BY HARRY.

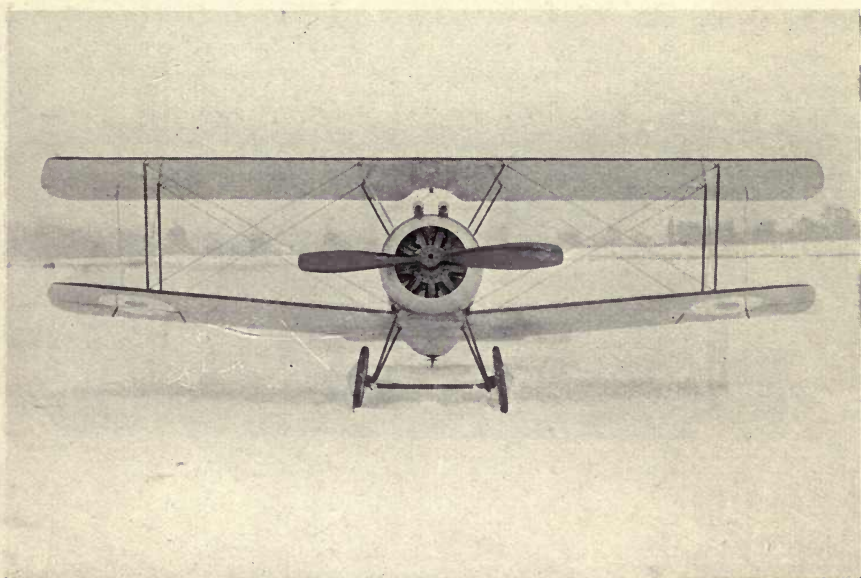


Photo by]

[J. Cecil Gould, Weybridge.

THE SOPWITH CAMEL—A WORLD-FAMOUS FIGHTING BIPLANE. HUNDREDS OF MACHINES OF THIS TYPE WERE TESTED BY HARRY DURING THE WAR.

was crowded with people, who had flocked from neighbouring districts to see the wonderful sea-bird, and, if possible, its personnel. But of course Harry did not venture ashore. He rested awhile aboard Mr. W. Jackson's yacht *Naida*. Arrangements had been made here for illuminated boats to be moored at the control area in the form of a triangle in case Harry should have arrived in the dark. The next stage to Aberdeen being 218 miles, Harry decided he would stop at Berwick to take in some petrol. At four o'clock the several boats, that had been attracted to the machine with almost magnetic precision, were cleared away, and at 4.22 Harry took leave of Scarborough.

After about an hour and a quarter it was found necessary to descend at Seaham Harbour, owing to a waterpipe springing a leak owing to the heat of an exhaust-pipe causing fusion of a rubber connection. Having repaired the trouble and refilled the radiator, Harry started again at 6.40 after a delay of 65 minutes. Exactly one hour later the same trouble showed again, and he was obliged to descend at Beadnell, 20 miles south of Berwick. He had piloted the machine over 495 miles during the day at an average flying speed of over 53 miles per hour, and had been on the go for more than 14 hours. It was almost too dark to see the compass, the air was very bumpy, and the engine inclined to misfire. Harry and Kauper therefore agreed to stay overnight at Beadnell and get going at 5 a.m. on the morrow. Nothing was wrong with the engine, and the water connection was effectively repaired.

On Tuesday morning Beadnell was left at 8.5 and 20 minutes later Harry passed Berwick. At 9.55 a stop was made at Montrose for the purpose of taking in water and making a few adjustments. After half an hour's spell they set out for Aberdeen, the next control after Scarborough, which was reached at 10.58. They came down from 1,500 feet in a spiral glide. Both Harry and Kauper felt very fit after their night's rest at Beadnell, and the fine weather prevailing gave them an additional stimulus to renewed efforts. At 11.52 they set out for Cromarty, the next

control, 134 miles away. Near there the air was exceptionally rough, but an otherwise good passage was made in 2 hours 13 minutes. At this point let us leave the itinerary for a while to enjoy further comments of "The Dreamer," which were published in *Flight* on August 30th, 1913 :

"THE SOPWITH-HAWKER-GREEN COMBINATION.

"I really cannot let this issue go to press without having a word to say about the topic which is on everybody's lips : the race round Britain. At the time of writing, H. G. Hawker has only reached Cromarty. I say 'only,' with regard to the full distance to be covered, and not as meaning I had expected him to have got further ; and what a magnificent flight ! Southampton to near Berwick in a single day ! I wonder what some of those who lived during the old coaching days would think could they know of the advance in modern travel. I wonder what the versatile Sam Weller would have said about a machine which could have delivered the venerable Pickwick safe and sound at Ipswich, whilst he, following in the coach, was changing horses at the Castle at Woodford.

"Mr. Sopwith has every reason to be proud of his machine. That he himself is a pilot of skill and great experience, experience gained not only in this country, but abroad, is liable, if we are not careful, to slip one's mind for the moment, now that, as head of the Sopwith Aviation Co., he is placed in a position where his services are of far more value on the ground than in the air. A year ago and Tom Sopwith would undoubtedly have piloted his machine round personally. That his experience is now standing him in good stead as a constructor is proved by the splendid performances of the machines emanating from his works. When one considers the comparatively short time in which this company has been building, and then remembers that their machines hold all the altitude records—and good ones at that—for this country, together with the Michelin Cup No. 1, the Mortimer Singer prize for six flights, with

alternating landings on land and water, and the splendid performance now being put up, the Sopwith machine must be rated as one of the very best.

"And what of the engine? Surely no one will say after this that England cannot build a good aerial engine. Think for one moment of this engine, so light that it only weighs some three pounds per horse-power, pounding away hour after hour, and asking nothing but to be kept well fed with petrol and oil. Have you ever seen the crank-case of an engine, with the crank-shaft in position, having the bearings tested by a bench run, by power applied from without? I have; and at top speed the cranks move so fast as to appear as one straight line of shining metal, and do not seem to be moving at all. Imagine this Green engine moving at this speed with the pistons in position, and induction, compression, explosion, and exhaust taking place so rapidly, together with all that it means in the way of moving valves, and keeping this up for hours on end! It says something for construction.

"Of the pilot, what can I say? The strain, mental and physical, must be enormous. Think of some one or other of the long journeys you have done in a motor-car; remember how stiff and tired and worn-out you have felt at the end of the day, with nothing but the ordinary care needed on the road to worry you; and think of this man sitting there twelve hours a day, day after day, thousands of feet up in the air, ears keenly on the alert all the time to notice any different note in the tune of the engine, eyes, whenever they can be removed from the petrol and oil gauges—not forgetting the compass, altimeter, and other instruments—for a moment, striving to pick up and follow the coast-line, always alert, always watching, always ready, and always the excitement of the race—the knowledge that one is attempting something never before accomplished; it needs nerves of steel to stand it, and Hawker has evidently got them. May he come in safe and sound with time to spare, and get all that he deserves."

At Cromarty, Harry and Kauper were well aware of the fact that they had to set out from there on what was probably the most difficult stage of the journey—from Cromarty to Oban, 94 miles along the Caledonian Canal. At 3.5 they started: nor did they reach their destination until 6 o'clock. This represented an average speed of slightly more than 32 miles per hour. Not only had they to drive against a high south-westerly wind, which had previously been aiding them, but also they suffered the consequence of the wind being terribly gusty owing to the mountainous nature of the region they were traversing. At times Harry changed his altitude by as much as 2,000 feet in his endeavours to dodge the particularly bumpy air currents. Many changes in their height were made involuntarily, the machine rising and falling in vertical air currents over which no human control was possible. All who have flown in an aeroplane in bad weather can appreciate what Harry and Kauper went through on the way to Oban. Having reached there at 6 o'clock, and it being out of the question to proceed to Dublin at such a late hour, Harry decided to spend the night at Oban and set out for Ireland at dawn.

At Oban they had a wonderful reception. There was a large dinner arranged for them, without regard to the fact that they had only the clothes in which they stood, with the exception of a clean collar and a pair of socks. Harry had arrived at his last pair of socks, and oil was continually dripping on his feet while he was flying. Having an hour to spare before dinner, for comfort's sake he proceeded to wash and dry his socks. He tried to get out of the dinner on the ground, that he had no raiment fit for social functions; but he was jokingly told he need not trouble to dress. Nevertheless, Harry and Kauper spent a most enjoyable evening, and their only regret was that the proceedings had to be cut short in order that they might have adequate rest before their start at dawn.

Rising at 4 a.m. on Wednesday, the partners enjoyed a hurried breakfast, and then had a good look over their machine.

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At 5.30 they were all prepared, and at 5.42 they started for Dublin, having previously arranged to call on the way at Larne for petrol. But the machine was reluctant to leave the water, and Harry beached her about a mile from Oban. After spending an hour in extracting water from the floats, he made a good re-start. Before leaving Scotland he landed at Kiells, in Argyllshire, in order to effect a minor engine adjustment. At 8.25 he was in the air again; and 65 minutes later he glided down into Larne Harbour. He made south for Dublin at 11 o'clock, only to be foiled a few miles short of the Irish capital by what he described as "just a piece of ghastly bad luck."

Suspecting that some of the valve-springs had failed, Harry decided to come down to inspect them. Meanwhile the engine had been running and developing its power, but an ominous rattle had worried Harry and Kauper. It was unfortunate that they did not know that Mr. Green, the designer of the engine, was awaiting them at Dublin with a set of new valve-springs. Had they been so acquainted, Harry would, of course, have continued on to Dublin without coming down to have a look at the springs. As it was, while descending in a spiral he lost control owing to his greasy boot slipping on the rudder-bar, and the aeroplane side-slipped into the water. Harry was unhurt, but poor Kauper suffered a broken arm and some cuts about the head. He was soon taken to the Mater Misericordia Hospital, at Dublin, where he made a good recovery, ultimately leaving the hospital on September 18th, 1913, with all his wounds healing well. The machine, of course, was done for.

Thus ended the most important event held under the auspices of the Royal Aero Club during 1913, in which 1,043 miles were covered in 55½ hours, the actual flying time being 21 hours 44 minutes—a world's record for a seaplane in those days. In recognition of his skill and courage, the *Daily Mail* made Harry a personal present of £1,000.

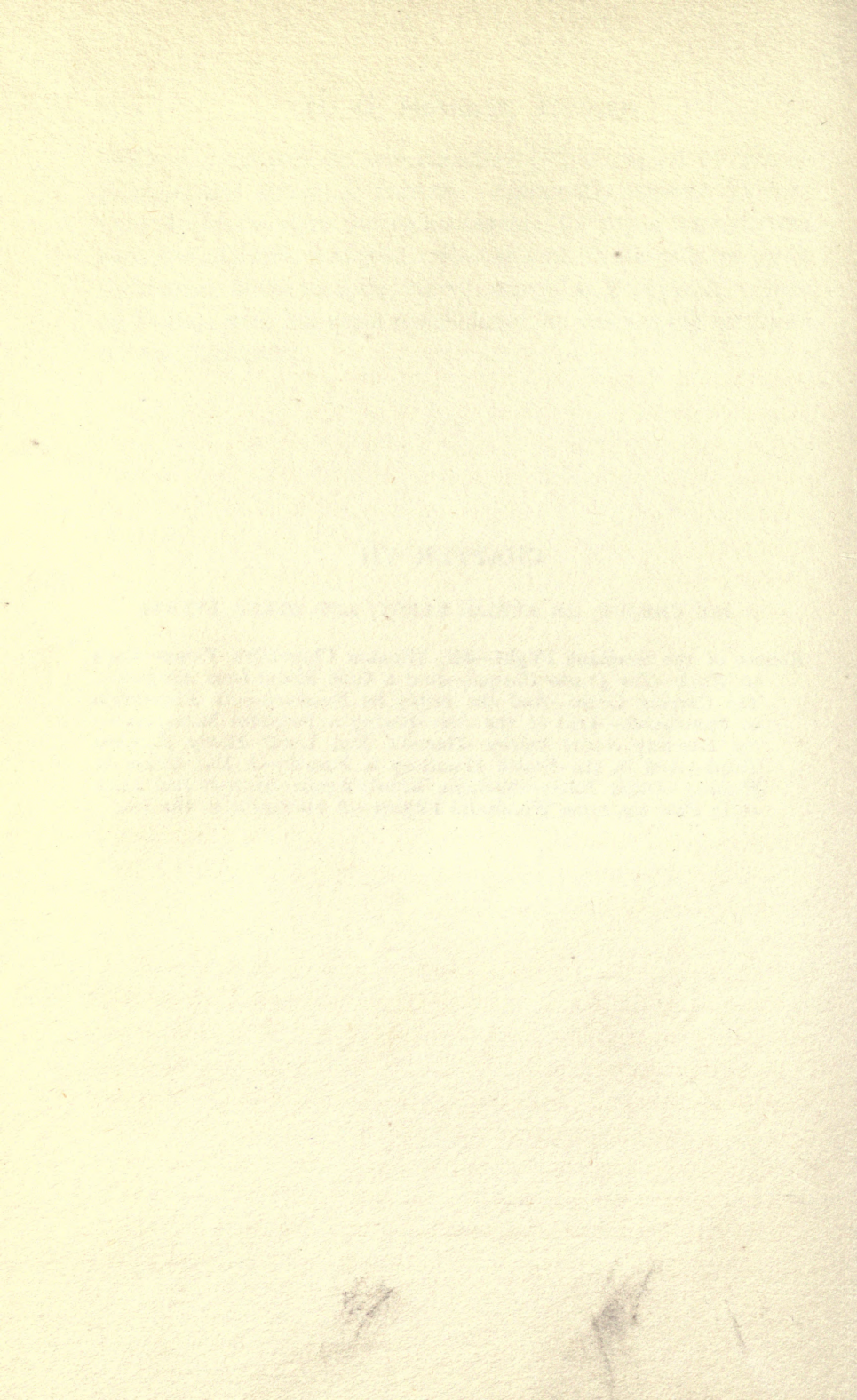
On the morning after the crash near Dublin Harry was busy superintending the work of dismantling the wrecked aeroplane.

While so employed he was considerably interrupted by photographers and autograph hunters. Apparently souvenir hunters were also on the scene during his absence, for one of the radiators had been carefully detached. Having seen to the packing-up of the remains of the machine, Harry returned to Brooklands, where on Friday, with his usual nonchalance, he was testing machines for the Admiralty.

CHAPTER VII

A BIG CHEQUE, AN AERIAL DERBY, AND OTHER EVENTS

Echoes of the Seaplane Flight—Mr. Winston Churchill's Views—Back to Work—The £1,000 Cheque—And a Gold Medal from Margate—The Carping Critic—And the Reply he Received—An Expedition to Eastchurch—Lost in the Air—Racing a Powerful Monoplane—An Exciting Aerial Derby—Hamel's Bad Luck—Harry Finishes Third—And in the Sealed Handicap is Fourth—A Bad Crash at Hendon—Other Races—Michelin Efforts Again—Harry's Bad Luck—He Puts up Some Wonderful Flights—A Headache in the Air.



CHAPTER VII

HARRY and Kauper received many messages of appreciation immediately after their failure. Sir George Reid, High Commissioner for Australia, wired : "Win or lose, Australia is proud of you both." Mr. Robinson, the Agent-General for Queensland, also wired : "Queensland warmly congratulates you both on splendid achievement, the merit of which is not detracted from by the regrettable accident that prevented you from reaching the goal." Mr. Winston Churchill, who was then First Lord of the Admiralty, and was on board the Admiralty yacht at Deal when Harry passed overhead, to the *Daily Mail* wrote :

"Mr. Hawker has achieved a wonderful result, and the accident which prevented complete success in no way detracts from the merit of a feat at once memorable and serviceable. The whole competition has been of real value to British flying. Though we started last, we must persevere till the first place is gained and held."

As various false reports as to the cause of the smash off the coast of Ireland were circulated, the Royal Aero Club found it expedient to issue an announcement as follows : "With reference to certain reports that the accident to the Sopwith biplane, used by Hawker in the recent race round Great Britain, was caused by the wings breaking in the air, the Royal Aero Club has carefully investigated the matter, and finds that the wings were entirely intact at the time the aeroplane struck the water."

On the Saturday, Harry was busy at Brooklands testing two machines and carrying many passengers, including the late

Mr. Pizey, instructor at the Bristol School, Salisbury, who was afterwards invited by Mr. Sopwith to pilot the tractor biplane, which he praised highly. Rain prevented any flying on Sunday. On the Monday, Mr. Sopwith, Mr. Green, Mr. Fred May, Mr. Perrin, and Harry were the guests of Mr. Thomas Marlowe, Editor of the *Daily Mail*, at a luncheon in the precincts of the Royal Automobile Club in commemoration of the flight. Mr. Harold Harmsworth, Mr. Hamilton Fyfe, Mr. Ashworth Briggs, and Mr. Sutton were also present. After luncheon, the company adjourned to the *Daily Mail* offices, where Harry received the handsome consolation prize of £1,000. Addressing him, Mr. Marlowe said :

“In handing you this cheque for £1,000 I may mention that this is the eleventh prize—making £24,750—that the *Daily Mail* has given for the encouragement of airmanship, and, like all the others, it is due to the direct initiative of Lord Northcliffe, the chairman of our company. I am sorry that, owing to his absence in America, he is unable himself to present it to you as a tribute to your courage and in recognition of the fact that you are the first man—and a British subject, too—to fly 1,000 miles over the sea. That, as I think we all agree, was a very great performance, one that shows that the water-plane is a weapon which will become of great value for military and naval purposes, and consequently a prime necessity of this island country.

“I have also to hand you a gold medal presented by the Mayor of Margate for the first airman to pass that town in this race, and another medal, which he asks me to hand to you for Mr. Kauper, your passenger. There is a third medal from the Mayor of Margate which he asks me to hand to Mr. Sopwith, the owner and designer of your waterplane.

“Here is a great bundle of letters which I have received for you. I have no doubt they all contain wishes in which we join—that you will be the first home when the race takes place next year.

“Finally, let me say that our greatest thanks are due to the Royal Aero Club, and especially to Mr. Perrin, the secretary of the club, for the admirable arrangements they made for the control and observation of the flight.”

Harry briefly expressed his thanks.

On behalf of the Sopwith Aviation Company, its founder proposed a vote of thanks to the *Daily Mail* for the “very sporting way” in which they had promoted the competition. The vote was seconded by Mr. Green, the builder of the engine.

In reply, Mr. Marlowe referred to the important parts played by Mr. Sopwith and Mr. Green. He said: “They made the flight possible. They brought it so near success that it must be achieved next year, and I can only hope that when the prize is won they may be very near the winning-post.”

The following editorial comment is from *Flight*, September 13th, 1913, and should be carefully studied by anyone who doubts the utility of aviation and in particular the usefulness of Harry's flight round Britain :

“Under the heading of ‘Mr. Hawker's Flight. What is the Moral of it?’ there was published in the *Manchester Guardian* of the 1st inst. a letter, signed by a Mr. S. V. Bracher, whose address is simply ‘London,’ and which is so full of false premises and erroneous conclusions that we can hardly allow it to pass without comment. The main proposition which he sets out to disprove is, as he says, that the enterprising newspaper which promoted the competition is now declaring that the lesson to be learnt from it is that the Navy must have a great many waterplanes, and that the designers of British engines and the builders of British waterplanes must make their plans immediately. He apparently does not think either that the Navy requires waterplanes, or that it is essential that British designers of engines and aircraft should make any plans for the future. He begins his argument by saying :

“ ‘To anybody able to keep cool amid the vast output of scare headlines and process blocks, it must be perfectly clear that one of the lessons of Mr. Hawker’s plucky adventure is that the time is not yet ripe for great public expenditure on aviation. His achievement has enabled everybody to realise the extreme precariousness and uncertainty of aerial navigation as hitherto developed.’

Continuing, *Flight* says :

“To take the first point, which apparently is that the Navy does not want waterplanes. We have no knowledge whatever of Mr. Bracher’s status as an authority in this matter. For all we know he may be the power behind the throne at the Admiralty—presuming that such a personality is needed by My Lords—or, on the other hand, he may know even less of the technical side of the subject than we ourselves. It seems to us that the best reply we can make to the proposition as stated is : Ask the Navy. But there is no need to ask the Navy, since we know perfectly well in advance what the Navy thinks of aerial navigation and its probable influence on war at sea. Is it for fun that the Navy is establishing aerial stations round the coasts and is training dozens of officers in the science of flight ? Or must we regard things seriously and believe that the Naval authorities know their business ? There is manifestly but one reply to this, and we can safely leave even Mr. Bracher to figure it out for himself. Unless we are content to ignore all the lessons of the past development of flight, and particularly those learned during the nearest approach to the ‘real thing’ it is possible to devise, we must come to the cold-blooded decision that the Navy not only wants waterplanes, but wants them rather badly.

“Having got thus far with our argument, we come to the next Bracher point, viz., that the main lesson of Mr. Hawker’s flight is that aviation is yet in so precarious a stage of develop-

ment that it would be foolish to spend large sums of public money in the equipment of an aerial defence service. Does Mr. Bracher really seriously ask his public to believe that this is the one and only conclusion to be reached from the result of Mr. Hawker's attempt to circle the coasts of Great Britain? Unless he is writing with his tongue in his cheek—and we do him the justice of saying that we do not think this for a moment—then he must be woefully deficient in imagination and wanting in the power of logical reasoning. Let us hark back and see what actually did happen during this flight. We need not go over all the details of it. Quite sufficient that we point out to Mr. Bracher and others who may be of his way of thinking that Mr. Hawker actually flew for a distance of more than a thousand miles—that is to say, a full two-thirds of the whole distance he set out to cover—and that he failed through absolutely no fault of the engine or of the machine. It was the lapse of the human factor that brought the enterprise to an untimely end. Therefore, it is fair to deduce the argument that already the machine and its engine have overtaken and passed the capacity of the man, and that if improvement is needed anywhere it is in the human and not the material machine. Let us say that we are not advancing this as a definite argument, but we do press the point that it is a fairer deduction than that reached by the correspondent of the *Manchester Guardian*.

“No one claims, as far as we are aware, that the aeroplane has reached its ultimate stage of development, but is that any argument for holding back provided we can be satisfied that it has arrived at a useful stage? Not for a moment could such a contention be allowed. As well might it be argued that because the Dreadnought is practically obsolescent before it is completed for its first commission, we should cease building battleships until such time as the final development has been reached. The man who would seriously argue thus would, deservedly, be accounted a dangerous lunatic. Upon the

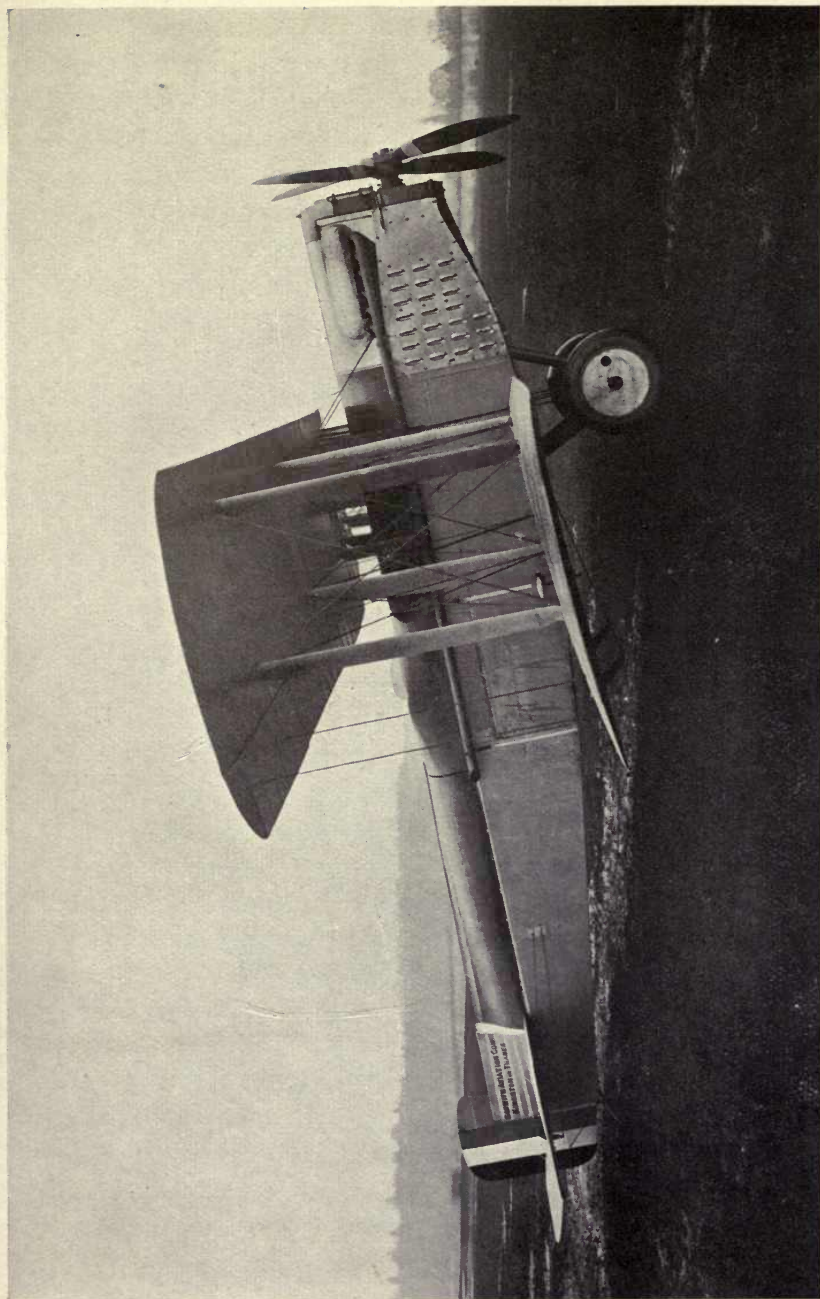
same ridiculous principle no one would go into the water until he could swim; no business undertaking would be engaged upon until a profit actually accrues at the moment of starting, and so on.

“The next point is this. Mr. Bracher says :

“ ‘Experts are saying that seaplanes require much stronger frames, vastly more powerful engines, and far more effective float devices than have yet been provided. In short, design must be revolutionised. Clearly this is the time for experiment, and not for any wide scheme involving heavy expenditure.’

“Now, this impresses us as being specious argument, since it is the sort of thing with which it is impossible not to agree in principle, but before we arrive at complete agreement we must examine the proposition and see what we mean by it all. Nothing was ever yet first produced in its final and perfect state, but this last has inevitably been reached by stages involving long and careful experiment. From the line-of-battle ship of the Nelson era to the last *Centurion* is a far cry. Again, in the case of under-water craft, there is an enormous gap between the original Holland boat and the latest submarine of the day. Now, what would have happened in either case if it had been agreed that these vessels were still ‘experimental’ and everyone had sat and waited for someone else to ‘perfect’ them? Once more, the answer is obvious. We should be where we were a hundred or more years ago. Instead, however, of having adopted any such foolish policy, we have gone on building and equipping ships which were the best we knew how to construct at the time, and have developed accordingly until we have reached the super-Dreadnought and the submarine as we know them now—and still the end of development is not in sight.

“Next, Mr. Bracher makes it a cause of complaint that the Naval and Military Defence Committee propose to :



THE SOPWITH ROLLS-ROYCE-ENGINE BIPLANE, "ATLANTIC," IN WHICH HARRY AND GRIEVE ATTEMPTED THE ATLANTIC CROSSING. THE TOP OF THE FUSELAGE WAS MADE IN THE FORM OF AN INVERTED BOAT, WHICH THEY DETACHED IN MID-ATLANTIC. THE UNDERCARRIAGE WAS DROPPED SOON AFTER THE START, IN ORDER TO REDUCE AIR RESISTANCE.

[Facing p. 108.]

“‘Equip all the coast defences and defended ports of the Kingdom with aviation stations, and in the case of the former, permanent establishments are to be maintained as soon as the necessary buildings can be erected and fleets of aeroplanes provided. Of the cost of this scheme one-third will be borne by the Navy and two-thirds by the Army.’

“He adds the surprising information that :

“‘The trouble is that, as a cold fact, the whole cost will be borne by the taxpayer ’!!!

“Now, unless we are content to assume that aviation has no bearing on military and naval operations, the answer is that these stations are necessary, even supposing the practical aeroplane has not yet materialised. That, of course, we do not allow, since we know the contrary to be the case. But even supposing it were so, we do know that its day is not far off, and as we construct dry docks large enough to take in battle-ships far exceeding in size those at present afloat, we must provide accommodation for our air fleet to be, for the sane and simple reason that it takes far longer to put up buildings than to construct the aircraft to occupy them.

“So far as we are able to read between the lines of the letter we have traversed, the meaning of it all is, that all the necessary experimental work is to be carried out by private firms at their own risk and cost, and that the State, which must ultimately benefit, should placidly stand aside and wait until private enterprise has accomplished the perfection of the machine. Never mind what is being done in other countries or what lead they may have or hold, let no penny of public money be spent on the development of aviation, but rather let that be left to the fools and the patriots. Such logic sickens us. Fortunately, we are able to think that it appeals to but a small minority of our countrymen.”

On Saturday, September 6th, 1913, ending a week of rainy and

windy weather, Harry started from Brooklands for Eastchurch at mid-day, carrying Mr. Simms as passenger, in one of the 80 h.p. Gnome tractor biplanes, for the purpose of delivering the machine to the Admiralty. He, however, lost his bearings at 1,500 feet, owing to the dense fog, and landed at Cheam. After leaving there with the intention of returning to Brooklands, he got lost again, and this time came down to learn that he was at Guildford, whence he easily found his way back to Brooklands. He ultimately made the flight to Eastchurch in 56 minutes, two days later, against a strong wind. With a full load and passenger he made a record climb for one of these 80 h.p. Gnome Sopwith Tractors, rising to 3,200 feet in 7 minutes 15 seconds. Leaving Brooklands at 2.40 p.m., he made Eastchurch shortly before 4 o'clock.

In spite of an overcast sky and a gusty wind, on Sunday, September 7th, many people flocked to Brooklands to see their hero of the Round Britain Flight, and Harry was kept busy by numerous admirers, writing his autograph in their books. He took up the winner of the ballot for a free passenger flight—Mr. J. S. Marsh of Birley Edge, Wadsley Bridge, near Sheffield—in addition to many other passengers. He also indulged in several exhibition flights, making steeply-banked turns and graceful spiral descents, thoroughly enjoying being back on a light-weight machine. On the following Sunday, the 14th, he took up several passengers and made exhibition flights in the evening, after a 30 m.p.h. wind had died down. In an impromptu race with Barnwell, whose mount was the 120 h.p. Martinsyde monoplane, he was obliged to yield to the superior horse-power of his rival's machine.

In the Second Aerial Derby, for a Gold Cup and £200 presented by the *Daily Mail*, held on Saturday, September 20th, 1913, Harry was one of fourteen entrants, of whom eleven actually started and nine completed the course, all landing within an interval of 20 minutes. With a couple of passengers, Harry brought his 80 h.p. Gnome Sopwith Tractor over from Brooklands in the early

A Big Cheque and an Aerial Derby 111

afternoon, before the race, Barnwell on the 120 h.p. Martinsyde monoplane, and Raynham on his Avro, also bringing their machines over about the same time.

The course of the race was a single circuit of London, starting and finishing at Hendon, *via* Kempton Park, Epsom, West Thurrock, Epping, and Hertford, a total distance of about 95 miles.

Commencing at 4 o'clock, the pilots started at intervals of one minute in the following order :

Baumann	(60 h.p.	Caudron biplane).
Verrier	(80 h.p.	Henri Farman biplane).
W. L. Brock	(80 h.p.	Blériot monoplane).
B. C. Hucks	(80 h.p.	Blériot monoplane).
Raynham	(80 h.p.	Avro biplane).
Hawker	(80 h.p.	Sopwith biplane).
Marty	(50 h.p.	Morane-Saulnier monoplane).
R. Slack	(80 h.p.	Morane-Saulnier monoplane).
Barnwell	(120 h.p.	Martinsyde monoplane).
Hamel	(80 h.p.	Morane-Saulnier monoplane).

The weather was exceptionally fine, what clouds there were being very high, and the sun constantly breaking through. The organisation of the event left nothing to be desired, and the start at 4 o'clock was punctual to schedule. Early in the afternoon there was a gusty wind, but as time went on this became steadier, and during the actual race it blew from west-north-west at no more than 18 miles per hour. Throughout the greater part of the course the wind was a beam or side wind, which materially reduced the flying speed. The crowds were enormous, every enclosure being packed, and the motor-car paddock could not cope with demands. Fields and vantage-points all around were crowded. Both Harry and Hamel were loudly cheered as they passed out of the aerodrome above the thronged enclosures; Harry presumably on account of his recent glorious failure, and

Hamel on account of his being favourite in the race through having chopped about ten feet off the span of his wings !

In the course of the race, Harry, who was sixth to start, passed Baumann before reaching the first turning-point, Kempton Park. As a matter of fact, Baumann landed and dropped out of the contest about half a mile before Kempton Park. Between there and Epsom, the second turning-point, Harry passed Verrier and caught up Hucks, with whom he was now one minute behind Raynham and half a minute behind Brock ; and so when Epsom was reached he was flying neck-to-neck with Hucks to decide which of them should assume the third position. By the time West Thurrock, the third control, was reached, Harry had got it, both Hucks and Brock being left behind on their monoplanes. But although he had passed Brock, Harry was still only third, for Hamel had bounded up and was one minute and a half ahead. Raynham still led Hamel by half a minute. Behind Harry was Barnwell, only one minute's flight away. Before Epping was reached Hamel had trouble with his petrol tap, and pluckily continued his flight, using one finger as a plug. At Epping, Harry had caught Raynham, and Barnwell led them both by about one minute. Hamel had dropped behind through the inconvenience of having to be a human plug for his petrol pipe. Nevertheless, when Hertford, the final turning-point, was reached, Hamel, with another burst of speed, was forcing his way past Barnwell, with Harry close behind, steadily gaining on Raynham. In the end Hamel won an exceptionally good race at an average speed of 76 miles per hour ; Barnwell was second with 72.5 miles per hour to his credit ; and Harry finished third at 67 miles per hour, beating Raynham by a few seconds.

In the Shell Sealed Handicap flown in conjunction with the Aerial Derby, Harry was fourth, Hucks, Barnwell and Brock taking precedence in the order named. Hamel, the scratch man, of course deserved to win the handicap, seeing that not only was he first home in the Derby, but also that he accomplished this under very great difficulties.

The day was marred by an unfortunate occurrence in which Mr. Pickles sustained a broken limb and internal injuries, and Mrs. de Beauvoir Stocks severe concussion, through side-slipping in a Champel biplane shortly after the race.

In the October Aeroplane Cross Country Handicap, held at Brooklands on Saturday, October 4th, 1913, Harry on an 80 h.p. Gnome Sopwith Tractor biplane was one of sixteen entrants, of whom only six started owing to rain and minor mishaps. He was second to Merriam, Barnwell and Knight being third and fourth respectively. On the Sunday, Harry made many exhibition flights in dull weather, and expressed his versatility by flying both 80 h.p. Gnome and 100 h.p. Green biplanes.

Wednesday, October 8th, was an unlucky day, for in attempting to start for the British Michelin prize, Harry crashed. At first it was thought to be serious, but at the Weybridge Cottage Hospital he was found to have escaped with only a severe shaking. By Monday he was fit and well. The Royal Aero Club issued a notice to members on October 18th which read :

“Mr. H. G. HAWKER.

“Mr. H. G. Hawker, who met with an accident at Brooklands last week, has now recovered. He visited the club on Tuesday last, and is quite fit again.”

The accident occurred through his trying to cross over trees, houses, and other obstructions at too low an altitude, he having left the aerodrome without doing a preliminary circuit to gain altitude. There was a fairly strong breeze blowing at the time, and the configuration of the ground and the trees caused gusts. The machine dived to the ground and struck one of the banks of the River Wey where it approaches Brooklands track towards Cobham. The impact was slightly out of the straight, and the force was relieved by the breaking up of one wing. Harry received strains to his back, but was prevented from flying for only ten days. He was busy installing the 100 h.p. Green

into the Sopwith in preparation for further Michelin attempts on October 25th.

In the 1913 competition for the British Empire Michelin Cup No. 1 and the £500 Prize, he had extraordinarily bad luck. The competition was originally to have ended on October 31st, but the donors of the prize, in consideration of the fact that by that date Harry's attempt, when he crashed at the start on October 8th, was the only one that had been made, postponed the closing date until November 14th. In the meantime Harry made another effort on October 31st. After flying for three hours and travelling a distance of about 220 miles in twelve stages between Brooklands and Hendon on a 100 h.p. Green-engined Sopwith, he was obliged to alight owing to a very violent headache. This attempt could not therefore be recognised, as the minimum qualifying distance to be covered was 300 miles. Two days before the closing date, the competition was won by Harry's rival, R. H. Carr, on a Grahame-White five-seater biplane fitted with the late S. F. Cody's 100 h.p. Green engine. On the last day of the competition Harry attempted to beat Carr's effort, but the weather was too rough, and the flight had to be abandoned in consequence.

Even sadder were Harry's fortunes in the competition for the British Empire Michelin Cup No. 2 and the £800 Prize. On November 19th, after ascending at 9.30 a.m. and flying from Brooklands *via* Eastchurch, Shoreham, Salisbury, and Hendon on the 100 h.p. Green-engined Sopwith, a distance of 265 miles in five hours, without a stop, he was obliged to return to Hendon through trouble with his petrol supply. After passing over Hendon at 4,000 feet, and with only a few more miles to cover, he discovered that it was necessary to fly with one wing lower than the other in order to collect the petrol in his tank at the side where the outlet ran to the carburetter. The reason for the shortage was that the pressure pipe to the tank had developed a bad leak and was hot because the consumption of the engine had been underestimated. In fact the reverse was probably the case, for it was subsequently found that everything adjacent to the tank was

literally drenched with petrol, and $4\frac{1}{2}$ gallons still remained in the tank. It was an unfortunate circumstance that a strong wind blew from the direction of Brooklands, but for which Harry would probably have been able to glide there from the height at which he was at the time. There was no hope for it, however, and he was reluctantly obliged to return to Hendon in a long glide.

At 10.20 a.m. on Thursday, November 27th, Harry set out on yet another determined eleventh-hour effort for the Michelin No. 2 Cup, but between Croydon and Eastchurch the fog he encountered was so thick that, being unable to see his way, he landed at Brooklands after three-quarters of an hour in the air.

The British Empire Michelin Cup No. 2 and the £800 Prize were not awarded in 1913.

On a new 80 h.p. Sopwith, Harry flew to Farnborough from Brooklands on Saturday, November 22nd, returning at dusk. On the Sunday he had an impromptu race with Raynham in the course of exhibition flying. He again flew to Farnborough on Monday, November 24th, on the 80 h.p. tractor biplane, with Mr. Blatherwick and Mr. Simms as passengers.

CHAPTER VIII

THE PROTOTYPE OF THE FIGHTING SCOUTS

Harry's Stroke of Genius—Ninety Miles per Hour with an 80 h.p. Gnome—When German Interests were at Brooklands—The Real Value of "Stunting"—A Biplane that Exceeded Expectations—When Hendon was Surprised—Construction of the Tabloid—Contemporary Sopwith Products—In Harry's Absence—Pixton Pilots a Tabloid to Victory—A £26,000 Ante-Bellum Aviation Company—Mr. Rutherford—Another Type of Genius—One of Harry's Records Broken—An Australian Poem—Death of Hamel.

CHAPTER VIII

WERE I asked to state in brief my justification for writing this public record of the life and work of Harry George Hawker, I would say that Thursday, November 27th, 1913, should be remembered as a day marking one of the great innovations in aeroplane design, a feature which contributed largely to Britain's supremacy during the Great War, and for which Harry was principally responsible, although he was always too modest to acknowledge that he had contributed more than a little towards it. The occasion was the arrival at Brooklands from the Sopwith Works of the 80 h.p. Gnome-engined Baby biplane, afterwards known as the Sopwith Tabloid. Although engined with a unit of orthodox dimensions, this machine could be described as a miniature biplane, the wing surface having been cut down to a minimum.

Prior to the inception of the Tabloid, the only reason for building biplanes, as opposed to monoplanes, was to get a large wing surface in as compact a form as possible. Therefore, when comparatively great weights had to be carried which demanded the use of big wing surface, biplanes were constructed. Furthermore, a certain structural weakness that had been revealed in the monoplane types of the day also contributed to the popularity of the biplane. But it was wholly a new idea to construct a biplane of smaller dimensions than the average monoplane. The initiation and general arrangement of this new type was entirely Harry's work, and was a most wonderful stroke of genius.

Almost every day somebody achieves a measure of fame by constructing some machine or other (not necessarily an aeroplane) of colossal dimensions surpassing anything previously

engineered, but to achieve notable success by adverting to a Lilliputian scale, seemingly primitive, is surely indicative of genius, and this is precisely what Harry did. The Sopwith Tabloid was a prototype which was copied far and wide by most of the leading aeroplane constructors in every country where aeroplanes were manufactured.

Naturally, when the machine arrived at Brooklands in its packing-case, Harry was very anxious to get it assembled and into the air, particularly as he was shortly returning "down under" to Australia, on a visit to his people and for a spell of flying there, and, all being well, he would take the Tabloid with him. After spending only an hour and a half in assembling it, he took the air and flew round the track at 90 miles per hour, an unprecedented speed for such a low-powered machine. His landing, too, was remarkably slow; and the speed contrast meant that his first design was an unparalleled success.

I am not sure whether he was inspired by the necessity of having a small machine to carry on board ship, or by Hamel's performance in the Aerial Derby with clipped wings, but whatever it was induced him to design the machine, Harry was responsible for a trend in aeroplane design that has only been equalled in importance perhaps by the innovation of the monoplane wing devoid of external bracing, and even for this it could not be claimed that it was of incalculable, if any, value to the Empire and the world during the Great War. Fighting scouts—thousands of them—were subsequently made for the Allies, and were the outcome of Harry's genius.

It is a fact of no small significance in view of subsequent events that when the Tabloid made its début at Brooklands a German aircraft concern was established there, and on Saturday, November 29th, Herr Roempler, a famous German pilot constructor, was flying one of the German D.F.W. machines.

The Tabloid was intended as a machine on which stunts of every description could be performed. Sopwith and Hawker were among the first to realise that manoeuvrability, or the

"stunting" property, was of more than mere spectacular interest, and that in time of war it would be of incalculable value. With such principles at the back of his mind, Harry announced his intention of looping-the-loop at an early date, a feat that Pégoud had introduced in order to demonstrate the strength of the Blériot monoplane and remove the prejudice against that type. The engine, tanks, pilot, and passenger were massed together in an unusually small compass, the passenger being seated side-by-side with the pilot. The original anticipated maximum speed was about 85 miles per hour, but in actual practice 94 miles per hour was exceeded. The wings, which were only very slightly curved, or cambered, measured only 26 ft from wing-tip to wing-tip. The curvature of the wings was considerably less than that of the standard type tractor biplanes, although wing spars of exactly similar section were employed—a notable instance of early standardisation. The original Tabloid had warping wings—not ailerons.

Pixton, who incidentally won the International Schneider Cup Contest at Monaco in the following year on a Sopwith Tabloid seaplane, had now come to the Sopwith hangars to carry on the work which Harry must relinquish during his sojourn in Australia.

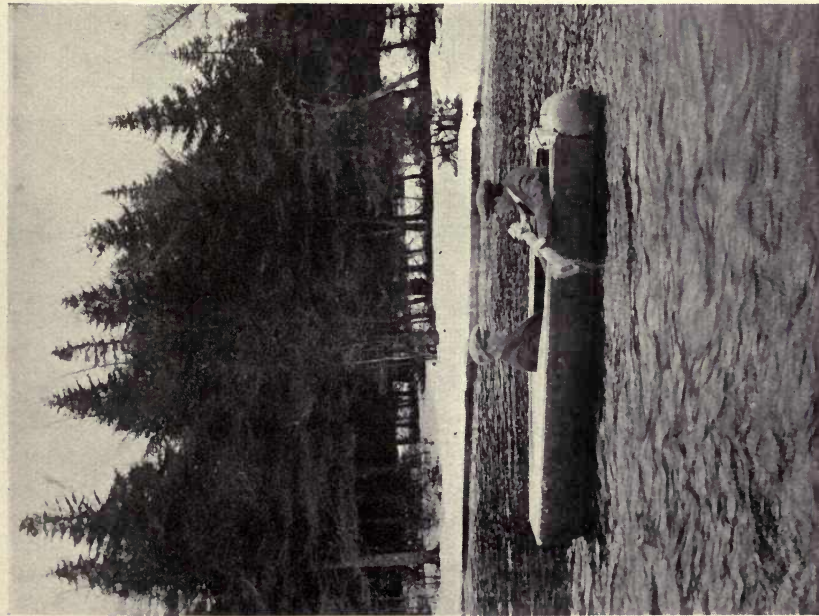
In an earlier chapter of this book reference was made to the deviation of the hub of British aviation from Brooklands to Hendon, where the London Aerodrome had by now developed into a popular rendezvous of London folk, and a good selection of British and Continental racing aeroplanes was to be found. Two days after having erected the Tabloid Harry flew it over to Hendon at a speed of over 94 miles per hour. Entering the aerodrome, he made two circuits at what was then considered an astounding speed, estimated at 90 miles per hour. Earlier in the day he had been down to Farnborough with the machine, where in an official test he attained a maximum speed of 92 miles per hour, a landing speed of 36·9 miles per hour, and a rate of ascent of 1,200 feet per minute. This performance, which was a

world's record, was carried out with a passenger and fuel for $2\frac{1}{2}$ hours. Empty, the machine weighed only 680 lb. On the following day Harry returned from Hendon to Brooklands, where he was surrounded by numerous admirers of the new Sopwith-Hawker product.

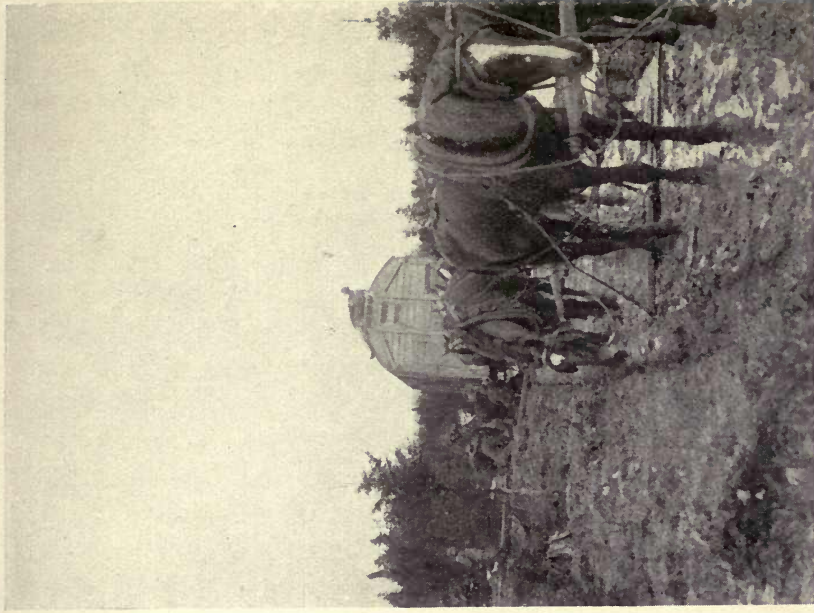
The following description of the Sopwith Tabloid is extracted from *Flight*, December 20th, 1913:

"When the latest production of the Sopwith Aviation Co. made its bow to the public at Hendon a few Saturdays ago it did so like a bolt from the blue, and, wasting no time in showing what it could do, immediately completed two circuits at a speed of about 90 m.p.h. The successes of the former Sopwith machines—designed by Mr. T. O. M. Sopwith and Mr. Sigrist—are, no doubt, still fresh in our readers' minds, and with this new 80 h.p. "baby" biplane, in the design of which Mr. H. G. Hawker, who piloted the former machines to success, has played an important part, it seems that further achievements will soon be added to the credit of this go-ahead Kingston firm.

"The general lines of the new biplane are similar to those of the other Sopwith Tractor machines. . . . It has been designed with the intention of producing what might be called an exhibition machine, that is to say, a machine capable of performing all sorts of evolutions such as steep bankings, small circles, switchbacks, etc. This machine is therefore of small dimensions, having a span of 25 ft. 6 ins. and an over-all length of 25 ft. The total area of the main planes is 240 sq. ft., which gives a loading 3 lb. per sq. ft. light or 4.5 lb. per sq. ft. fully loaded, the weight of the machine empty, and with pilot and $3\frac{1}{2}$ hours' fuel, being 670 lb. and 1,060 lb. respectively. The main planes, which are comparatively flat, are set at a slight dihedral angle, and the top plane is staggered forward 1 ft. They are built up in two cellules, the lower planes being attached to the lower portion of the fuselage, whilst the top planes are secured to a centre panel



TESTING THE LIFEBOAT. ON THE BACK OF THE ORIGINAL PHOTOGRAPH HARRY WROTE : " NOTE THE BROKEN ICE BETWEEN THE BOAT AND SHORE."



THIS PICTURE SHOWS SOME OF THE DIFFICULTIES IN GETTING THE AEROPLANE TO THE STARTING-GROUND IN NEWFOUNDLAND. THE DRIVER APPARENTLY TOOK THINGS LYING DOWN.
[Facing p. 122.]

The Prototype of the Fighting Scouts 123

supported above the fuselage by two pairs of struts ; there are only two other pairs of struts, separating the main planes near the extremities. . . . In plan form the planes have a greater length in the trailing edge, as on the Morane monoplane. The fuselage follows usual Sopwith practice, being rectangular in section, tapering to a vertical knife-edge at the rear. The pilot is seated in a small cockpit between the planes, whilst another seat for a passenger is provided on the pilot's right. The forward ends of the top and bottom longerons converge, forming an attachment for the front engine bearer. The 80 h.p. Gnome engine is mounted in the nose of the fuselage, and is almost completely covered by a neat aluminium cowl, but is nevertheless efficiently cooled by the stream of air pressing through a narrow slit formed in the cowl by the front engine bearer ; the lower extremity of the engine also projects slightly below the cowl. The latter is easily detachable, and hinges forward, giving easy access to the valves. The carburetter, to which the petrol is fed by gravity, projects within the cockpit, and can easily be got at by the pilot or passenger. The landing chassis has been considerably modified, and consists of two short skids, each connected to the fuselage by a pair of struts. At the rear the skids are connected by a streamlined cross-strut, in the centre of which is hinged the divided axle, carrying at its outer extremities the covered-in running wheels. In its normal position the axles lie in a groove formed in the cross-strut, thus maintaining the streamline effect of the latter. The axle is sprung by means of rubber shock-absorbers attached to the skids, and is held in position by two very short radius rods, hinged to the rear extremities of the skids. In order to prevent the cross-strut from bending downwards in the middle, it is braced at this point to the fuselage by a wire. . . . The tail consists of a semi-circular stabilising plane, to the trailing edge of which are hinged two elevator flaps with a balanced vertical rudder, almost circular in shape, between them. . . .

"Lateral control is by wing warping, the movement being carried out by a wheel mounted on a vertical column, a fore-and-aft movement of which operates the rear elevators through a connecting-rod and countershaft. The warp cables are led from a rockshaft to pulleys let into the uprights of the fuselage just above the rear spar attachments of the lower plane. From these pulleys the cables go to the top sockets of the rear outer struts. A continuous cable also runs from each of the outer rear strut sockets of the lower plane over pulleys on the tops of the two rear struts attached to the fuselage. . . . Flying over the measured course at Farnborough, fully loaded with fuel for $2\frac{1}{2}$ hours, pilot and passenger, a maximum speed of 92 m.p.h. and a minimum speed of 36.9 m.p.h. were attained. The climbing speed was 1,200 ft. in one minute, also fully loaded—quite a credit to British aeroplane design. It was originally intended to take this biplane over to Paris during the Aero Show in order to demonstrate its wonderful capabilities in the home of aviation, so to speak. We understand, however, that this plan has been changed, and that the machine has been sent out to Australia, where Mr. Hawker will put it through its paces above his native soil, and endeavour to rouse the interest of the Australian Government. After staying there some months, we may hope to see him back in England. Our readers will, we feel sure, join us in wishing both Mr. Hawker and the Sopwith Aviation Co. every success in this latest enterprise."

Among other new machines under construction at the Sopwith Works about this time may be mentioned a huge seaplane of 80 ft. span, propelled by two 120 h.p. Austro-Daimler engines. The two propellers were each of 12 ft. 6 in. diameter. There was also a new type of flying-boat driven by a 200 h.p. Canton-Unné, or Salmson, radial water-cooled engine. This machine, which was exhibited at the Aero Show held at Olympia in March, 1914, was considered the strongest and best-made flying-boat

of its time. Very soon after the advent of the Sopwith Tabloid, and shortly after Harry's departure for Australia, another Sopwith made its first appearance, in the shape of a machine whose size was between the Tabloid and the standard 80 h.p. tractor biplane. This new biplane, known as the Tweenie, was engined with a motor of 100 h.p. The first model was acquired by the Admiralty. In April, Pixton, on a Sopwith Tweenie fitted with floats, won the classic Schneider Cup at Monaco. The achievement attracted much attention from foreign journalists as signifying a great British triumph. Very little notice of the event was taken by the British lay Press; but the Royal Aero Club held a luncheon in honour of Sopwith and Pixton, on which occasion Sopwith recounted many of the amusing little incidents which led up to the evolution of the winning machine.

Before giving a detailed account of Harry's experiences on his Australian expedition it is well to record one or two happenings which transpired in his absence from England.

"Will o' the Wisp," in *Flight*, January 10th, 1914, perpetrated the following, which calls for no further explanation:

" 'Sopwith Aviation Company, Ltd. December 15th, 1913. £26,000 (£1) (6,000 six per cent. cum. pref. and 20,000 ord.). To take over,' etc. Um—sounds all right. Fast little beggar that new Baby-plane. Good Hydro, too, that one that nearly got round the circuit. Clever chap T. O. M., clever men with him, too: what are we going to see in 1914? "

An Australian, after a visit to England, said: "Plenty of flying can be seen at Brooklands. They're cool customers nowadays. They bid you good-day, hop on board their machine, there's a whiz and a flutter, and your man is out of sight, all in a space of a minute or two."

Of nine tractor biplanes ordered from the Sopwith firm by the War Office about this time, Harry was only able to deliver the first, as the others were completed in his absence, when Pixton was responsible for delivery.

Harry's name was well known outside aeronautical circles, even in these days, when trans-Atlantic flights were no more than suggested. The following incident, reproduced from *Flight* of January 31st, 1914, provides amusing evidence of this. "Will o' the Wisp" is again the culprit.

"When Mr. Hawker returns to this country from Australia he will have to search out Mr. Rutherford, of Gainsborough, and have a few words with him. Mr. Rutherford rode up to one of the hotels in Lincoln the other day on a motor-cycle, and said he was Hawker, come to do some exhibition flying in the neighbourhood. He was, of course, immediately the hero of the place, and was introduced to all and sundry. He had great tales to tell of his flight round Great Britain and what he was going to do in the future. So friendly did he become, that he promised to take many of the guests for a joy-ride so soon as his mechanics should arrive with the machine. Of course, there is always somebody who can't leave a poor chap alone, and the kill-joy in this case was a policeman, who turned up and arrested the giddy Rutherford for stealing the motor-bike, which he had hired at Gainsborough and had forgotten to return. The police found that he was in the possession of ninepence, which goes to prove the old saying that it is not always necessary to possess money to be happy. Incidentally, he said he had had over a thousand offers of marriage. Perhaps, when he has finished his four months' imprisonment, he will consider one of them."

On Tuesday, February 3rd, 1914, Harry's British height record of 11,450 feet was unofficially broken by Raynham, who, with Mr. Harold Blackburn as passenger, ascended to 15,000 feet. Harry's absence in Australia provided an unique opportunity for his records to be broken and new records held by others, at least until his return. On the following Tuesday, under official observance, Raynham broke Harry's record for one passenger by

The Prototype of the Fighting Scouts 127

ascending to 14,420 feet with Mr. MacGeagh Hurst. On March 7th, Captain Salmond's flight of December 13th, 1913, when 13,140 feet was reached, was officially recognised as beating Harry's record. Harry's other records, for one, two, and three passengers, still stood, pending confirmation of the reports of Raynham's attempts to break them.

"*Aeolus*," in *Flight*, May 15th, 1914, wrote :

"From a chatty letter to hand from Mr. George Payne, of Ballarat, Australia, it is evident that Harry Hawker's trip 'down under' has created considerable enthusiasm among our Australian cousins. In the case of the local poet this enthusiasm has found vent in the following effort, which I think well entitled to a corner in this page :

'ARRY 'AWKER.

(After Kipling, behind scratch.)

News Items.—Mr. Harry Hawker, the young Australian airman, made several successful flights at Caulfield in the presence of 30,000 people. During one of his flights he was accompanied by a young lady.

Senator Millen, Minister of Defence, was a passenger with Mr. Hawker in a recent flight over Melbourne.

'E's a boster ! 'Arry 'Awker,
'E's a doer, not a talker,
Wot we calls a real corker,
Tho' not rash ;
'E cares nothing for a blizzard,
Though it cut him to the gizzard ;
In the air he "is"—a "wizard"—
Less the smash.

An' 'e don't use any frillin'
Just to set the people thrillin'
When they pay their bloomin' shillin'
At the show ;

H. G. Hawker, Airman

But 'e takes things wery easy
 While 'e sees the engine's greasy,
 An' 'e shouts, 'owever breezy,
 "Let 'er go!"

An' away 'e goes a-soarin',
 While the ladies all adorin'
 With us common blokes a-roarin'
 In our joy;
 An' our praise 'e needn't flout it,
 So let everybody shout it,
 For there is no doubt about it
 'E's the boy!

An' we 'ear that Mr. Millen
 Found that flyin' way so killin'
 That no doubt 'e'll now be willin'
 Straight away
 To give 'im an invitation
 To be boss of aviation
 For our young Australian nation,
 With good pay.

With 'is plane to fly about in
 'E'll be just the boy for scoutin'
 If the foeman pokes 'is snout in
 Doin' wrong.
 'E will never prove a balker.
 'Ere's good 'ealth to 'Arry 'Awker;
 May 'e keep like Johnny Walker—
 Goin' strong!

But be wery careful, 'Arry,
 While with us you mean to tarry,
 Or I'll bet you're bound to marry
 Wery soon;
 For you'll find yourself a-sighin',
 An' the ring you will be buyin',
 If you take the ladies flyin',
 Near the moon!

"In his letter, Mr. Payne also mentioned that Australia is sending us another of her sons, as Mr. Treloar, of Ballarat,

is going to England shortly in order to be initiated into the gentle art of flying. I hope that Mr. Treloar will prove as apt at handling the control-lever as are those of his compatriots who have already made a name for themselves in the flying world over here."

The saddest episode of which England's shores were the scene during Harry's absence in Australia was the disappearance of poor Gustav Hamel, who, after setting out to fly to France, flew into a Channel fog and was never heard of again.

CHAPTER IX

AERIAL PROPAGANDA IN AUSTRALIA

Back to Australia—Harry Expresses Some Views—Australian Air Policy—He Speaks of Stabilising Devices—A Reminiscence of the Round-Britain Seaplane Flight—A Civic Welcome—Harry's Father Speaks—Assembling the Tabloid—First Flight in Australia—Preparations for Flight—Flying from a Street—An Object Lesson at Government House—Harry Dispels a Fallacy—And Speaks about Whirling Propellers—A Flying Call on the Governor-General—Interrupts a Game of Tennis—What the Governor-General Thought of Harry—Old Melbourne Friends Fly—The Australian Press—Enterprising Lady Passengers—Passengers pay £3 per Minute—Curious Attitude of an Association Official—Organisation of a Big Public Flying Exhibition—Harry's Views on Flying—A Crowd of 25,000—Is Difficult to Handle—And Affects Harry's Programme—An Accident—Without Serious Consequences—The Minister of Defence Ascends 3,500 Feet.

CHAPTER IX

THERE arrived at Fremantle on Tuesday, January 13th, 1914, R.M.S. *Maloja*, having on board the Sopwith Tabloid and Harry, who landed at Melbourne on the following day to visit his parents. Interviewed by a representative of the Press, Harry said the difference between a modern biplane, such as that he had with him, and an old "box-kite" biplane, an example of which the Australian Government had recently acquired, was as great as that between a motor-car and a bullock wagon or pantechicon. Aviation, he said, had made great strides during the previous year or two. The "box-kite" biplanes were still regarded as serviceable school machines, but had not sufficiently good speed capabilities for military requirements, which the higher-powered modern machine undoubtedly possessed. He pointed out that the costs of the Tabloid and of a "box-kite" machine were about equal, and that, considering its power, the former was the cheapest machine on the market then.

With an eye to business, Harry said he was prepared to fly from Melbourne to Sydney in about $4\frac{1}{2}$ hours. He would also loop-the-loop. The latter offer was received with some surprise, as no one, least of all a layman, had contemplated the possibility of doing this in anything but a monoplane then. He was prepared to take off from the street in his small speedy biplane, provided there were not, of course, any cross wires or paddocks. Reminded of the attempt of one, Cugnet, to rise from the Melbourne cricket ground, Harry said he would not have tried to do that in a slow, low-powered machine. "What Cugnet did said more for his pluck than his brains," was Harry's way of putting it.

Regarding stabilising devices, Harry declared them to be superfluous. "The bird has no mechanical stability device," he said. "The muscles of its wings give it stability, and, as pilots have become more skilful and have gained a better knowledge of their machines, the risk of capsizing has been reduced to practically zero." Aviation, said Harry, had advanced in the direction of knowledge and greater power and control. Never had he heard of an aviator being blown over. On account of the high degree of natural stability in the modern aeroplane it was, he said, a difficult matter to keep a machine on its back when deliberately flying upside down. Natural stability received too scanty attention, and if pilots would let their machines "fly themselves," so to speak, there would be fewer accidents, was Harry's opinion.

"Flying," he said, "is full of interest and is not half so dangerous as the public imagine. Over 90 per cent. of the accidents are due to carelessness, not necessarily on the part of the pilot, but of workmen who leave wires slack and do not test the structural parts of the aeroplane."

Asked for reminiscences of the Round Britain Seaplane Flight, Harry replied: "I don't think there is much left to be said about it. Every inch of the way has been discussed and every experience told. We were in danger several times; out of sight of land, and at times out of sight of the sea beneath as well, owing to thick fog. The strongest impression I have retained is of an old Scotsman. Having landed somewhere on the Scotch coast to repair an oil-tube, we were met by this gentleman sauntering down with his dog. Was he astonished? Not at all. One would have thought he had seen thousands of aeroplanes. His conversation was limited. He sat on a stone while we worked, and asked us where we were going and why, and whether 'Yon thing all goes up together,' a question which has since become almost a classic among the humorous anecdotes of aviators. We assured him it did. He did not seem in the least surprised when we came or when we departed."

On his return home to St. Kilda, Harry was welcomed by the Mayor, at the Town Hall. It was midday, and there was a distinguished assembly. The presence of the Postmaster-General was significant, for postal authorities had then, and even now still have, to be educated as to the value of aircraft for mail-carrying. The Mayor said they had all followed with the greatest interest their fellow-townsmen's advancement in the Old World, and it was hoped when he returned to England he would put up further records in the world of flight. Mr. Agar Wynne spoke of Australians having all wished Hawker every success in his attempted flight round Great Britain. There, in Australia, they were far away from the big centres, and it was only by the push and energy of their young citizens at the other end of the world that Australia had become known among all the nations. He expressed regret that Hawker had again to leave Australia, but hoped that when he came back again they would be able to congratulate him on still greater achievements. After others had said their say, Harry in reply expressed his pleasure in knowing that as an Australian he had gained successes in England, where, on his return, he would do his best on behalf of Australia. Harry's father said that amidst all the successes and applause his son had not forgotten his home. He had brought a machine with him, partly of his own design, which had not been publicly demonstrated in England to any extent. Victoria was to have the first opportunity of seeing that machine fly.

The welcomes over, Harry lost no time in assembling the Tabloid, on which the necessary work was almost complete by January 22nd. On Monday, the 26th, the machine was on view, assembled, at the C.L.C. Motor and Engineering Works, Melbourne. The highest-powered aeroplane ever seen in Australia, it was regarded as a most serviceable type. A trial flight, which Harry provisionally arranged to make on the 26th, had to be postponed owing to the fact that the special castor oil, necessary for lubricating the Gnome engine, had not passed the Customs. There was talk of Harry taking part in the Sydney Aerial Derby, timed

to be flown in February, and it was generally supposed that, if it did compete, the Tabloid would win easily. Harry certainly was considering the question of making a non-stop flight from Melbourne to Sydney on behalf of a well-known rubber tyre firm. The Australian Defence Department had recently acquired a number of aeroplanes, and it was hoped that some at least of these could take part in a race to Sydney.

Harry made his first flight in Australia on Tuesday, January 27th, 1914, a fortnight after his arrival. Several flying-men had visited Australia before, and one or two had left the ground, but Harry was fairly acclaimed the first to show Australians the immense possibilities of mechanical flight. One who stood by while he carefully went over every nut with a spanner, tested each wire and each moving part, recalled to mind previous flights that failed, and bethought himself care is not the whole of an airman's equipment. But the tightening of a nut might prevent a broken neck, and it was little wonder that an airman should not overlook anything that might mean the saving of his own neck.

There was nothing theatrical about the preparations. The hero of the day did not gaze anxiously up aloft, frown, and shake his head. He did not have long and heated arguments with his mechanic, nor did he attire himself in large yellow clothes or look unduly nonchalant with a cigarette hanging from the lower lip. The onlookers, contrary, perhaps, to expectations, saw only the man whose interest was centred in carefully tightening the nuts and adjusting the bracing-wires. As one said, each airman who came to Melbourne had a different expression just prior to the appointed hour for flight. Cugnet, he said, looked stern and perhaps a little sad; Hammond bore the impassive countenance of an Indian chief; but Hawker smiled as if it were an enjoyable game.

His decision to make his maiden Australian flight was, apparently, sudden. In the morning it was announced there would be no flying, but by 4 o'clock in the afternoon the news had gone round in some mysterious manner to the effect that he

was about to make a trial flight. One wing was put on the machine in the garage in which it was stationed, the other being put on and adjusted when the machine had been wheeled out into the street. When everything had been trued up, and there only remained the engine to be tested, Harry got into his seat, the propeller was swung, and several people lost their hats in the draught caused by the rotating mass. Much dust was raised too. The engine having cracked and spluttered and roared, and Harry being assured of its good tune, he waved his arm; and the four begrimed individuals who had been holding the machine back let go. Down New Street, lined by crowds on both pavements, the machine raced for thirty yards or so before rising into the air. Harry climbed steeply, at once turning westward over the golf-course, while a maddened horse, drawing a van, rose on its hind legs, seemingly pointing out the aeroplane to the crowd, who watched a beautiful demonstration of the aviator's art.

At a height of about 600 feet Harry described right-and left-hand circles, banking at 45 degrees and more. Then he dived at what appeared to be an unprecedented speed to within a few feet of the ground, afterwards steeplechasing above fences and trees. He climbed and climbed again, alternately switching off his engine and diving, as it were, to the attack. Finally he mounted higher than previously and set off in the direction of Toorak. After following the valley of the Yarra at a height of about 5,000 feet, he glided down above the grounds of Government House and switched on again at about 2,000 feet. He then crossed above the lake in Albert Park, returning by the seashore to the Elsternwick golf-links, to which he descended in a fine spiral glide, ending in a sharp vertical dive and a beautiful landing at only 34 miles per hour. The flight occupied about 20 minutes. He was received with vociferous cheering. As the good horseman after finishing a journey sees that his horse is fed, watered, and bedded before he seeks his own dinner and repose, so did Harry carefully stow away his machine out of reach of the crowd before yielding to any calls for speeches and interviews.

It appears that airmen who had previously made unsuccessful attempts at flight in Australia sought to justify their failure by declaring the Australian air to be unsafe and mysteriously different from the air of Britain or France. This fallacy was clearly dispelled by Harry. "There is not the slightest difference," he said. "It is the same sort of air, except that it is clearer than the English. When I crossed the Albert Park lake I could see Geelong very plainly."

Speaking of his machine, Harry said: "The engine worked splendidly. The highest barograph record shows 5,000 feet. The engine developed its full revolutions, and I was doing 90 miles per hour." He explained that there was one point upon which the Australian needed education. That was—that it is unsafe to get in the way of an aeroplane when it is rising from or coming to ground. "The whirling propeller," he said, "has played a part in not a few tragedies at European aviation meetings, and crowding in on it is a very good method of suicide."

This short trial flight which Harry made was considered by far the best that had been seen in Australia, both as regards speed and control. Getting off from the street was in itself a unique performance. The value of swift flight under precise control in warfare was appreciated by the onlookers as incalculable.

A few days later, on February 3rd to be precise, the Governor-General, Lord Denman, received a literally flying visit from Harry. It was shortly after luncheon, when Lord and Lady Denman, about to play tennis with some friends whom they were entertaining, were surprised by a telephone message to the effect that Harry had just left Elsternwick and would be over to see them in a few minutes. Their Excellencies had barely time to reach the lawn before a tiny speck became discernible against the blue sky and fleecy white clouds to the south-east. After very few minutes had elapsed, Harry in the Tabloid passed, seemingly slowly, over the massive buildings of Government House, at a height somewhere between 3,000 and 5,000 feet. To those on

the ground it was apparent that Harry had experienced no difficulty in finding his way, for he came straight as a die from the south-east, where Elsternwick lay, and as soon as he was above his destination he began to descend in a magnificent spiral, whizzing round and round and down and down at a terrific pace. As he came nearer to the ground he executed several manœuvres for the benefit of those below. Making sharp turns, he banked his machine to such a degree that many considered it miraculous that he kept his seat at all. Then, when above the polo ground and facing Government House, he glided down to the lawn, steeply and with startling suddenness.

Harry's main concern while landing was thinking out how he should present himself to the Governor-General. As the Tabloid came to rest, like a great winged beetle, at the far end of the lawn, Lord Denham and his party walked over to it and came upon an unassuming, clean-shaven young man, clean and unruffled as if he had just done no more than merely walk from St. Kilda road opposite. A little bit nervous, Harry shook hands and thanked the Governor-General for the warm welcome. He had, he said, a very good flight from Elsternwick, and the stiff breeze which blew did not trouble him at all. The landing, too, had presented no difficulties.

Harry stayed for about half an hour, during which he explained his machine to his hosts. They were particularly interested in the cockpit and controls. Harry learned that Lord Denman was very interested in aviation and before going out to Australia had enjoyed one or two flights as a passenger in a Grahame-White biplane. There was also present Captain Pollocks, A.D.C. to the Governor-General, who had also had some flying experience in England. The departure was as informal as the arrival. The machine was pulled round a little so that it would have a clear run against the wind. Harry then said he thought he "had better be getting along," and, after again thanking His Excellency for his warm reception, he climbed in and was away.

After skimming along the ground for thirty yards or so, the

machine rose grandly over Government House and sailed at full speed round the grounds, under such perfect control that the whole business looked very simple. Again he banked his machine on sharp turns, and at times he appeared to be almost on the point of turning over. But Harry did not indulge in any trick flying of that nature, but was contented to attempt no more than well-balanced turns and "zooms." One of his dives was so sudden that Harry's manager, Mr. Sculthorpe, remarked that it looked more like the influence of an awkward air-pocket than an intentional manoeuvre. After climbing to an altitude of about 3,500 feet, Harry at last headed south-east for Elsternwick, leaving a trail of smoke behind. In a few minutes the machine, after dwindling to a mere speck, passed from sight.

When informed subsequently of the allegation that Harry was far more nervous of meeting him than of flying in the teeth of a gale, Lord Denham laughingly said that so far as he could see, "This young Australian airman seemed to be little concerned over one thing or the other." His Excellency added that the flight seemed not to have any physical effect on Harry. "His hand was as steady as mine when we met," he said.

On his return to Elsternwick, Harry, feeling less restrained, gave an even more spirited display of fancy flying for the benefit of the crowd gathered to watch his landing. He alighted on the golf-links without incident, and after a brief rest made two more flights, each time accompanied by a passenger. His two passengers were two old Melbourne friends, Cecil de Frager, who subsequently lost his life in a motor-cycling accident in France while serving as a captain with the Australian Forces, and Maurice Smith.

Commenting on Harry's flights, the *Melbourne Argus* remarked that a characteristic feature common to all of them was the complete absence of theatrical display. Harry flew as unconcernedly as an expert drove a motor-car, and apparently with the same degree of ease and comfort. He made the whole business delightfully simple, and his personal preparations before starting

a flight were considerably less formal than those of a motorcyclist before mounting his machine. He wore ordinary clothes, his sole extra covering or protection being a pair of goggles. When he stepped on to the lawn at Government House he was not even ruffled. His hair was nicely parted and his tie straight. To the uninitiated it seemed absurd to think that he had been tearing through the air at 90 miles per hour, a mile above the earth. One could understand his not wearing a dustcoat in such circumstances, but might have expected something less ordinary than a lounge suit and a grey cap.

Another matter upon which the Press commented was the rapidity with which the Tabloid was prepared for action. At 2.20 p.m. the machine had been reposing more or less dismantled in the garage of the C.L.C. Motor Works. In less than an hour it was soaring aloft with a man, nearly as high up as the top of Mount Buffalo. In that brief interim the biplane was pulled out from its shed, the wings were attached, and everything made ready for flight. On no occasion did Harry omit to thoroughly examine his machine before flight.

Although his intention to fly to Government House had been kept a close secret, the flight was, of course, witnessed by several thousands of the populace, who happened to catch sight of the machine or hear the murmur of the Gnome engine as it passed high overhead. A large crowd, including nearly a hundred amateur and professional photographers, gathered at Elsternwick to see the start and end of the flights. A special exhibition of flying was arranged to take place at the Caulfield Racecourse, and while in the air Harry distributed handbills announcing the fact and vouchers valid for admission to the course.

On February 3rd, the day on which he flew to Government House, Harry was waited on by two ladies who desired to fly as passengers. The flights were arranged to take place on the Saturday following, although one lady offered £10 to be taken there and then, so that she might be certain of being the first lady passenger in Australia. She was disappointed, however,

as Harry was not prepared to undertake any more flying until Saturday.

Passenger flight tickets found a ready sale at £20 each. In anticipation of a rush for tickets at the Caulfield Racecourse meeting, combined railway and admission tickets were on sale at tourist booking-offices beforehand. Special tramway services were also announced. The biplane was arranged to be in a prominent position where all who entered the course would be able to make a reasonably close inspection of it.

On February 4th the *Melbourne Argus* published a letter from the Hon. Secretary of the Caulfield Progress Association, protesting against "the use of the public park and recreation reserve known as Caulfield Racecourse for a display for which a charge was to be made," and pressed the point that the proceeding was illegal. This letter did not, however, cut enough ice to prevent the *Melbourne Argus* from announcing on the following day special railway services for the occasion, as well as the intention of Sir John Madden and Sir George Reid to be present on the course.

Further correspondence relating to the use of the public preserves was received and published by the *Melbourne Argus*. One correspondent expressed surprise at the short-sightedness of the Hon. Secretary of the Caulfield Progress Association in objecting to the racecourse being used in the interests of aviation, and highly commended the action of the authorities in recognising the national aspect of the event. Another correspondent, probably a pessimist this time, who expressed doubt as to the power of the Minister of Lands to give permission to make a charge for admission to a display on the Caulfield Racecourse, stated that nothing short of an Act of Parliament could give the organisers of the display authority to make a charge. The Hon. Secretary of the Caulfield Progress Association endeavoured to justify his first by another letter, which appeared in the *Melbourne Argus* on February 6th. The morning paper announced that the gates would be opened at 1.30 p.m. The public were warned that on no account would they be permitted to encroach



THE DETACHABLE BOAT CARRIED ON THE ATLANTIC FLIGHT.



THE SOPWITH TRANS-ATLANTIC BIPLANE IN THE HANGAR
NEAR ST. JOHNS, NEWFOUNDLAND.

on the straight required for rising and alighting, but they would be allowed to cross the course between the flights. Further train and tram services were announced.

The Australian Press were not lacking in giving every possible support to aviation, and in particular to Harry's enterprise. On Saturday, February 7th, the *Melbourne Argus* devoted a whole page to descriptive details and pictures of the Tabloid, with which Harry was to give his exhibition in the afternoon. Asked how much there was in the art of flying, Harry replied: "All you have to do is to get off the ground, keep up, and get back again, when and where you want to." Replying to a request for his opinion as to a certain accident, when an aeroplane fell to the ground and was smashed as if it were an egg, Harry said that the source of the trouble was a heavy machine flying low down near the ground. What one required most of all was plenty of air beneath one. He himself never from choice flew below 3,000 feet. If anything happened while one was well up, there was a chance of making a good recovery before making contact with solid earth.

Upwards of 25,000 people assembled at the Caulfield Race-course to witness Harry's flying exhibition on the Saturday afternoon. In New Zealand, Sydney, and Adelaide, the public had already seen a fair amount of good flying, but, excepting those who had happened to see his previous informal flights, the people of Melbourne had not until this Saturday made the acquaintance of an experienced pilot who was as much, if not more, at ease in the air as on the ground. Many factors probably accounted for the extraordinarily large attendance. The display was unique, for one thing; then the fact of Harry being an Australian, and young at that, would draw many from pure sentiment. Again, was not the man of the hour distinguished in the world of flight?

The early part of the day was rainy and cheerless and there was little improvement by the time the flights were to start. The outlook was far from promising. Nevertheless, all the scheduled

special trains, numbering eighteen, were filled to overflowing, carrying 8,500 people in all. All roads leading to the racecourse were filled with motor and other vehicular traffic, which accounted for another 17,000 people. It was a veritable Derby Day. Although several thousands paid to enter the course, as many, and probably more, occupied points of vantage outside, from where a clear view of the sky was to be had. The top of the fence which surrounded the field was lined with hundreds of heads of boys, youths, and men, all craning their necks to see as much as possible without expending more than a little energy. Others thronged the roads and streets in the vicinity.

It was most unfortunate that, owing to the fact that the crowd was too great to be amenable to the wants and dictates of the management, the display was marred. Carried away by their enthusiasm and curiosity, parts of the crowd overran the landing-ground, and so forced Harry, in the interests of their safety, to abandon some of his programme. Harry had previously been at great pains to choose this straight stretch and arrange for it to be kept clear as a starting-and alighting-ground. But across the end of the straight, near a newly-erected grandstand, a densely-packed mass of people gathered, while hundreds of others persisted in lining the rail of the steeplechase course. It was thus rendered very difficult for Harry to land, and these two masses of people considerably reduced the landing-space available. In fact, as a result of the heedlessness of the crowds to warnings, cajoling, and the attempted force of the police, at the end of his second flight Harry was forced to make a fast landing, which terminated by his swerving on the ground and running into the railing at the flat side of the straight, where the crowd was exceptionally dense. One man, Mr. G. K. Francis, an uncle of Harry's friend and mechanic, Kauper, was struck on the nose by the still slowly revolving propeller, and several others in the vicinity received blows from other parts of the machine. Fortunately no one was seriously injured, and the damage done to the machine was very slight. Apart from a damaged landing chassis and a splintered

propeller, no other fracture occurred. Before this happened Harry had decided that the crowd was making matters impossible for him. His original intention was to make a solo flight first and then follow this up by a series of passenger flights. A Miss Dixon was to be the first passenger and Mrs. Clive Daniel the second. Lord Denman, the Governor-General, accepted an invitation to make a flight. Several other passenger flights had also been arranged beforehand.

However, when the first ascent had been made according to schedule, the crowd became unmanageable. The primary cause of the trouble was without doubt the immense enthusiasm of the crowd and the intense admiration which they had for Hawker. After his first flight, Harry managed to have his machine drawn back to its original starting-point near the beginning of the straight. Then the crowd which blocked that end of the course broke from behind a police cordon and swarmed round the biplane. The number of police present was inadequate to be of any avail. The crowd would not be forced back. The two or three mounted police who were stationed in the straight galloped up to the assistance of their colleagues on foot and did their utmost to force the crowd away. Miss Dixon had just walked down the course to the point where the biplane stood, ready to take her seat. The crowd swarmed round on every side, and meanwhile people from the other side of the straight were climbing the fences and running across the track. The police did the most they could to stem this new tide, but fully half an hour elapsed before anything approaching order was restored. Even then the people lining the end of the straight had advanced their position a considerable way up the track, and thousands were lining the high fence on the flat side of the course. Harry and his mechanics and members of the racing club harangued the crowd and warned them of the danger, but their efforts to clear the course were of no avail. Harry therefore decided not to take the risk of making a landing in the cramped area with a passenger on board. Nevertheless, in order that the entertainment should not be

entirely spoiled, he determined to make one more flight, with Miss Dixon as a passenger, and land at Elsternwick.

His altitude record having been broken in England a few days previously, Harry had felt inclined to attempt to regain it in the course of his exhibition on Saturday, but in view of all the circumstances which I have outlined he abandoned the idea. Nevertheless, his second flight was an effective exhibition of altitude flying. He topped 6,000 feet and was almost lost to the view of the spectators. Descending after a flight of about fifteen minutes, Harry experienced the landing difficulties which he had expected and which terminated as already described. Sweeping in from above the new grandstand, he switched off his engine and swooped down, only to find the space too small for landing. He switched on again and passed above the crowd. Three times he repeated this manœuvre, which the crowd cheered and regarded as an intentional feature of the exhibition. On the fourth occasion he landed and ran into the crowd as explained. Speaking of the accident afterwards, Harry said: "I made a very bad landing, but it was a very difficult place. If there had not been so many people there it would have been all right. It was difficult work, but the machine stood the test."

To review these flights in greater detail.

However great was the difficulty when near the ground, Harry was perfect master of the machine in the air. Like a snipe hopping along the ground before it takes wing, the machine shot forward. No one seemed really to expect that it would fly, and the shout which rent the air as the machine left the ground seemed one of half astonishment and half satisfaction. At first Harry was content to traverse the course, circling round and round above the heads of the people, who cheered and cheered again. Turning the nose of his machine into the south-westerly wind which blew, Harry began to climb in ever-narrowing circles. Suddenly he pulled back the "joy-stick," and from the crowd below came a long-drawn "Ah!" To those on the ground it seemed impossible that the machine could right itself. But Harry had

done no more than wilfully stall his machine, which, instead of turning upside down, merely slid down about two hundred feet on its tail. Righted once more, the machine was made to bank, volplane, twist and turn like a great bird circling and hovering above the sea of upturned faces. Then apparently it grew tired and swooped gracefully to earth again. Passing over the stewards' stand, Harry several times playfully swooped down and up, leaving only a few feet between the machine and their heads. Momentarily the crowd felt a thrill of fear.

Cheers rent the air as the machine at last came to a standstill, and when Harry, after he had scrambled out, walked towards the grandstand, there was a general rush to congratulate him and shake his hand. Thus ended the first flight.

The second flight seemed to the watchers below far more sensational than the first. Scarcely waiting to circle the course, Harry began to climb. The bark of the motor became no more than a purr as the machine forced its way upwards, towards the sun apparently; 5,000 feet up, the Tabloid appeared as a soaring bird to the crowd below. Suddenly the purring of the motor ceased, and like a black-winged peer of the eagle, the biplane sailed across the sky, twisting and turning as it were in pursuit of visible prey. As it descended, the machine appeared to change from black to grey. It was swallowed up by cloud and disappeared altogether, only to return to earth with surprising suddenness.

"Wet? No!" said Harry afterwards. "That wasn't a wet cloud I went through, it was a dry one. White clouds are always dry. You go through black ones, and you'll know the difference. A white cloud is just like a dry white fog and the sun lights this up beautifully. It is not a very clear day down here, but it is really a very nice day up there. I was thinking while I was up that there seemed to be just about one hundred miles of snow mountains, and the sun was lighting up every one of them."

When Miss Dixon came down from the clouds, she, too, remarked on their beauty as seen from above. Miss Dixon incidentally paid £20 for the trip, which worked out at more than

£3 per minute. Although it was a costly business, many other ladies wished the flight could have been theirs. Mrs. Clive Daniel who had also made arrangements for an excursion on Saturday afternoon, was naturally very disappointed at not being able to make the flight owing to the unavoidable change in Harry's plans. Mr. Daniel went so far as to offer Harry an extra £10 if he made the flight, but Harry would not incur the risk. He offered instead to make another flight with Mrs. Daniel from Elsternwick after landing Miss Dixon there. When it was suggested by someone the ladies should toss a coin in order to determine who should have the privilege of the first trip, Miss Dixon declined to abandon her bargain of having purchased the right to be the first lady passenger, and accordingly she made the flight, which I will now describe.

For about five minutes the biplane circled the course and then, pointing its nose homeward, flew directly for Elsternwick. The journey took about a minute, and Harry brought the machine down on the golf-links. Apparently it was Harry's unlucky day, for a further accident befell the machine as it came to earth.

When the news spread abroad that Harry had decided to land at Elsternwick, another great crowd assembled there. As soon as he saw the people, Harry realised that he was confronted with a very difficult landing problem. In order not to injure anybody, Harry purposely made a steep descent. Unfortunately the biplane swung sharply round when it touched the ground, with the result that the propeller splintered, the landing chassis was badly wrenched from its mountings, and sundry wires were strained. Luckily, no one received any injury.

Miss Dixon thoroughly enjoyed her experience, and her enthusiasm was shown by the fact that she at once arranged to make another flight with Harry at Sydney.

As Harry had been careful to bring one or two spare propellers with him to Australia, the damaged Tabloid was soon restored to flying trim.

On the following Wednesday, four days after the foregoing

sensational incidents, Harry had the honour of taking the Minister of Defence, Senator Millen, for a flight. Senator Millen thus had the distinction of being the first member of the Federal Cabinet to make an aeroplane ascent in Australia. He was greatly impressed by the bird's-eye view of Caulfield, Malvern, Armadale, and St. Kilda, which he had during a flight lasting about a quarter of an hour at a height of 3,500 feet and a speed of 90 miles per hour. The flight was kept as secret as possible. Nevertheless a crowd assembled in the hope of seeing something, and, as usual, they pushed forward and occupied the fairway. Mounted on a box, Harry's father announced that there would be no flight until all had withdrawn to the wall. This had the desired effect, and Harry took his seat, ready to make a preliminary test flight. After a run of about 40 yards, the machine rose gracefully, and, steering a south-easterly course, Harry climbed to about 1,000 feet. After circling round the park, he switched off his engine and glided to earth, landing on precisely the same spot from which he had taken off.

Surrounded by a circle of friends, including the Minister of Customs, Senator Millen watched this preliminary display with obvious interest, and when it was over he made his way forward as it were to congratulate Harry. But a burly policeman intercepted him and requested him to retire. At the time very few of those present knew what the Minister really intended to do. Senator Millen, turning to the constable, spoke a few words to the latter, who at once broke into a smile and allowed him to proceed. During the ensuing minutes the policeman bore the air of one who had been entrusted with an important secret.

But the Senator's real mission was soon disclosed. Putting on a pair of motor-goggles, he handed his hat to one of the mechanics, and, after donning a cap, stepped up, and down into the passenger's cockpit. "Good boy, Millen!" shouted somebody, and the crowd applauded. This time the machine took the air after a run of no more than thirty yards. Heading into the wind, they soared steadily above the electric power station until the

only background was the cloudless sky. After attaining a height of 3,000 feet, Harry, heading eastward, took the Minister over the neighbouring suburbs. The purr of the engine was distinctly heard by the people as the machine passed above their heads. A white cloud from the exhaust-pipe indicated the path of the machine, like the foam in the wake of a liner. To the onlookers it seemed as if the machine proceeded out to sea during part of the flight, but Harry explained afterwards that he did not actually cross the water, but merely followed the coast. As the aeroplane turned down-wind, Lieut. Petre and Lieut. Harrison, of the Defence Department, estimated its speed at over 100 miles per hour. Time and again it appeared to pitch and roll under the influence of the strong breeze, but always under perfect control. After flying for about a quarter of an hour at considerable height, Harry shut off his engine and glided down, heading into the wind. After sinking and disappearing for a few seconds behind the Elsternwick Hotel, the machine climbed just high enough to clear the building by a few feet and swept between two tall pine-trees, close to the ground, skimming along for about 50 yards, a few inches above the turf, as if undecided whether or not to land. Then it touched gently and, after a single hop, came to a standstill. Senator Millen was received with loud cheering as he stepped from his seat.

After his flight with Harry, Senator Millen said: "I cannot say that there was any feature one could describe as thrilling; nothing can make one feel that one is heroic or any sort of a dare-devil: it seems so beautifully simple, so steady, and so safe." After stating other opinions of his flight, he said: "My flight with Hawker was one of the most enjoyable experiences I have had. Hawker is master of his machine and seems to manipulate it by a movement of his finger. While I watched him he never at any time made a movement with his arms. In any case there is very little room to move in the cockpit. I have done a great deal of fast motoring from time to time, but there is no comparison between that and soaring in the air."

Harry afterwards took Lieut. Harrison, an airman of the Australian Defence Force, and then Mr. T. G. White, holder of the motor speed record between Melbourne and Adelaide. Mr. Francis Syme also had his first experience in the air. On each occasion the rising and alighting of the machine was accompanied by vociferous applause.

Harry found the weather conditions the most boisterous he had yet experienced in Australia. The strength of the wind he estimated at 35 miles per hour, and the fact that it was not steady, but gusty, called for most skilful piloting. The distance covered in his flight with Senator Millen was about 20 miles. Prior to this flight Harry had only flown an aggregate of about three hours in Australia, in which time he covered in all about 270 miles. With Lieut. Harrison he ascended to about 3,800 feet.

Harry certainly displayed a keen appreciation of the economics of flying propaganda while in Australia. Naturally his main object was to popularise aviation as much as possible, and to do this he spared no effort in giving exhibition flights at principal centres of population. On the several occasions when he spoke of his preparedness to fly from Melbourne to Sydney in under five hours he did not overlook the fact that a remunerative inducement was a necessary concomitant. During most of the time he would be flying over open country where there would be few people to appreciate the object lesson provided by the aeroplane. Therefore the expense of the flight must be retrieved.

The weather conditions on Friday, February 13th, being good, Harry had his machine out at 10.30 a.m. Two ladies and two gentlemen enjoyed fairly lengthy flights during the morning, and Harry could have continued carrying passengers until sundown had not the weather been too good! As there was absolutely no wind it was difficult for Harry to land below 40 miles per hour, and, the space available being rather limited, he would not risk any further landings. As usual, a large number of spectators was present. "How do they get wind of it?" asked Harry. "I thought we had kept this little flight absolutely

secret." But whenever the biplane was ready for ascent there was an eager crowd waiting to watch and applaud or to take photographs. By 2 o'clock a huge crowd had assembled outside the garage in anticipation of witnessing further flights, but they had to be disappointed as there was not a breeze of strength to ensure a safe landing. Although Harry several times sent word to the effect that there would be no flying during the afternoon, the people were content to wait until dusk in a spirit of expectation.

During Harry's stay at Melbourne the Tabloid was continuously on exhibition, either in the air or in the garage. Although a charge of only one shilling was levied for admission to the garage, the sum received soon totalled more than fifty pounds, representing over one thousand visitors. To a Londoner this may seem, at first sight, very few, but when it is realised that the population of the whole of Australia is practically equal to that of London, it is clear that the show was a great success.

CHAPTER X

AERONAUTICAL ADVANCEMENT IN AUSTRALIA

Harry's Proposals for Aerial Defence—Seeing Under Water from the Air
—A Crowd of 20,000—A Governor-General Ascends 4,000 Feet—And
a Governor's Daughter Goes Up Too—Stunts—Rumours of Looping
—Another Accident.

CHAPTER X

WHEN Harry arranged to leave Melbourne for Sydney on Tuesday, February 17th, he did not do so on account of any falling-off in the interest of the residents of Melbourne and district, whose enthusiasm never abated. In fact, when he did leave, and when he departed from Australia for the last time (although he never knew it to be the last), there were many who, having offered as much as £20 for short flights, had to be disappointed.

There was no narrowness about Harry's plans for promoting aviation propaganda in Australia. One idea which influenced his actions considerably was to bring into bold relief in the world of aeronautics the name of Australia, to do which he must accomplish the converse, by bringing the world of aeronautics to the knowledge of Australia. He hoped to achieve his object in part by establishing one or two important records before returning to England in May. On the important subject of the aerial defence of Australia Harry expressed very strong views; and his authority was never disputed, for had he not been brought into close touch with defence requirements in testing the Sopwith hydro-aeroplanes for the Admiralty and in flying one thousand miles around the British coast? He gave it as his opinion that the aeroplanes already imported by the Australian Defence Department would be of no practical use for the purpose intended. His view was supported by several sound reasons. First, he declared that Australia's long coast-line made it imperative to employ hydro-aeroplanes or flying-boats, and not land machines.

"No one," he said, "is coming from New South Wales to attack Victoria. The danger to either state or the whole continent will threaten from the sea, and it is therefore on the sea-

board that Australia must be prepared to intercept the enemy." Continuing, Harry declared that what was required by the Australian Defence Department was a number of machines which could slip out over the coast at a speed of a hundred miles an hour and drop their engines of destruction upon the enemy before he "pushed the battle to the gate." Another significant statement which Harry made concerning the machines which had already been acquired by the Defence Department related to their antiquity. "Those machines," he said, "were ordered to my knowledge twelve months before they arrived here. They have been here approximately twelve months. Aeroplanes are constantly being improved, and the constructors as a rule produce at least two new models a year. So, you see, your machines are four models old already, and can only be used, if at all, for school purposes."

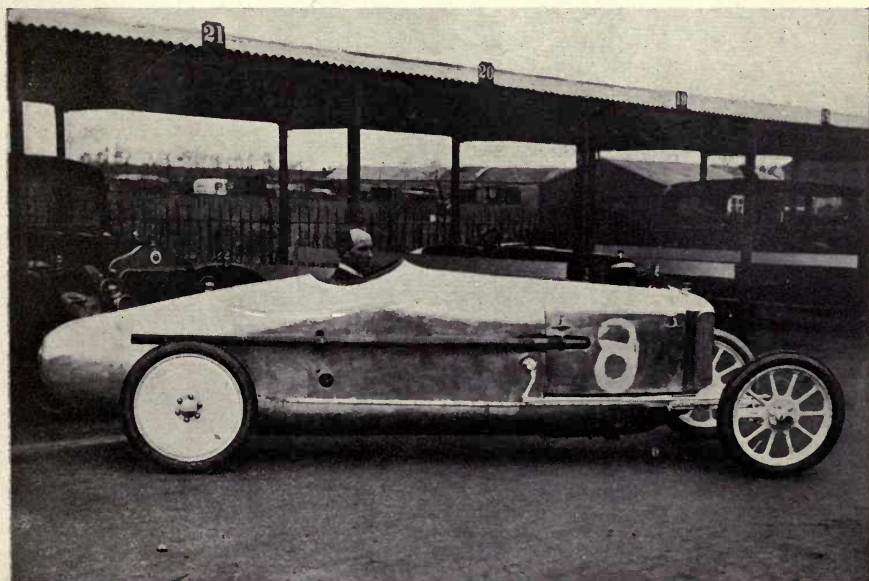
The Australians were much interested when one of the lady passengers carried by Harry said that she could plainly see the bottom of the bay while she was flying over Port Phillip. Harry and Kauper, during their round-Britain flight, were able to see wrecks below water off the Scottish coast. They found that views of this nature are not in any way hampered by unfavourable conditions overhead, such as clouds. A correspondent, in a letter to the *Melbourne Argus*, made the suggestion that an aeroplane might be sent to fly above that part of the ocean where the ill-fated *Waratah* was last seen, with a view to locating the whereabouts of the wreck.

When asked to express his opinion of the meteorological conditions prevailing in Australia, Harry said: "They are the finest in the world. If there is one country in the world where aviation can be taken up whole-heartedly as a sport, that country is Australia."

On Saturday, February 28th, Harry gave a flying exhibition before 20,000 people assembled at the Randwick Racecourse, Sydney. Most people knew that Lord Denman was coming to see the flying, but none had the least idea that the Governor-



THE DERELICT AEROPLANE, IN WHICH HARRY AND GRIEVE HAD ATTEMPTED THE CROSSING, WAS RECOVERED FROM THE ATLANTIC BY THE U.S. STEAMER "LAKE CHARLOTTEVILLE."



HARRY AT THE WHEEL OF THE RACING A.C., THE BODY OF WHICH WAS DESIGNED BY HIM AND PROVED A REMARKABLE ADVANCE IN EFFICIENCY.

General would take the air with Harry. Lord Denman, who had previously enjoyed a flight at Hendon, was taken up to 4,000 feet. The next passenger was Miss Strickland, daughter of the Governor of New South Wales. With these distinguished passengers Harry did not attempt any stunts. In both cases the machine took the air at a fine angle, climbing steadily. A couple of circuits were made at a speed of about 90 miles per hour.

It was during the flight with his third passenger, that Harry felt justified in altering his plans. No one who witnessed his flights on this particular Saturday afternoon would have been afraid to trust themselves to his care; as one said, he controlled his biplane with the ease and grace with which an expert chauffeur controls a motor-car. Ascending almost perpendicularly, he attained an altitude of about 3,000 feet; then, with the machine banked almost beyond the vertical, he descended in a rapid spiral. To those below it frequently seemed that the machine was upside down. A great outburst of applause attended one such descent, in which, instead of at once landing, he levelled up the machine within a few feet of the ground and continued round the course, conveying a vivid impression of speed. On this particular occasion, after scouring the grounds in search of afternoon tea, Harry landed in the vicinity of the grandstand!

Harry had another flying engagement to keep on this particular Saturday, and he flew over to the Victoria Park, Sydney. Many times he was out of sight, hidden above clouds. There had been some talk of his attempting to loop-the-loop during the afternoon, but the conditions were not at all favourable. For one thing, Harry had no intention of making his first attempt to emulate Pégoud at a height of less than 4,000 feet, and on this particular afternoon there were thick clouds at 1,500 feet. He would have had little satisfaction in going above them and doing the job out of sight of those below, for who would have borne testimony to his having accomplished the feat? Despite the low clouds, Harry carried a goodly batch of passengers at Victoria Park and then flew back to Randwick, where he was flying

again on the morrow. On the Sunday he carried many passengers, and his trick flying was greatly applauded.

Reaching an altitude of 2,000 feet, Harry gave what was described as a magnificent flight of ten minutes' duration, before an assembly of six thousand people, at Albany, N.S.W., on Sunday, March 8th. He followed up this flight with another, in which he established an Australian altitude record by reaching 7,800 feet. During part of this flight he was hidden from view above clouds. When he reappeared he executed a series of thrilling glides and dives, finally coming down to about 400 feet. At this height he turned and flew in the direction of the grandstand, and then, with intent to land, made a complete turn. Spectators at once realised that Harry was experiencing trouble with his engine. During his gliding and spiralling descent from the great altitude he had allowed the Gnome to get cold, a circumstance always fraught with the risk of not being able to restart the engine immediately as required. Spluttering as the machine descended, the engine finally gave out at 300 feet. Then it was Harry made a daring dive in the hope that his motor would once more throb into active life. But this manœuvre, twice repeated, was of no avail. From a height of about 20 feet Harry brought the machine to ground in a crowded paddock near the racecourse, in full view of many spectators and about 50 feet from the three-railed fence. At first it was thought the landing was satisfactory, but the momentum of the machine would have carried it through the fence and wrecked the engine. Harry, realising this predicament, took drastic steps, without hesitating. He plunged the nose of the machine to earth so that the biplane stood on end with its tail pointing skyward. A dense cloud of dust was raised.

Thinking that Harry must be injured, the crowd gave utterance to a cry of dismay; but a moment later Harry climbed out of his seat unhurt. Of course there was a wild rush to the spot where Harry, the coolest man in the crowd, was examining his machine. The damage amounted to a splintered propeller, broken landing chassis, and broken interplane bracing-wires.

Harry's only comment at the time was : " It was due to pure carelessness. I let the engine get cold." In so claiming entire responsibility for an accident, Harry unconsciously displayed his love for the cause of aviation. An accident seen by a large crowd is essentially a set-back to the advancement of commercial aviation. Presumably to avert this as far as possible, Harry said : " Blame me, not the aeroplane," or words to that effect.

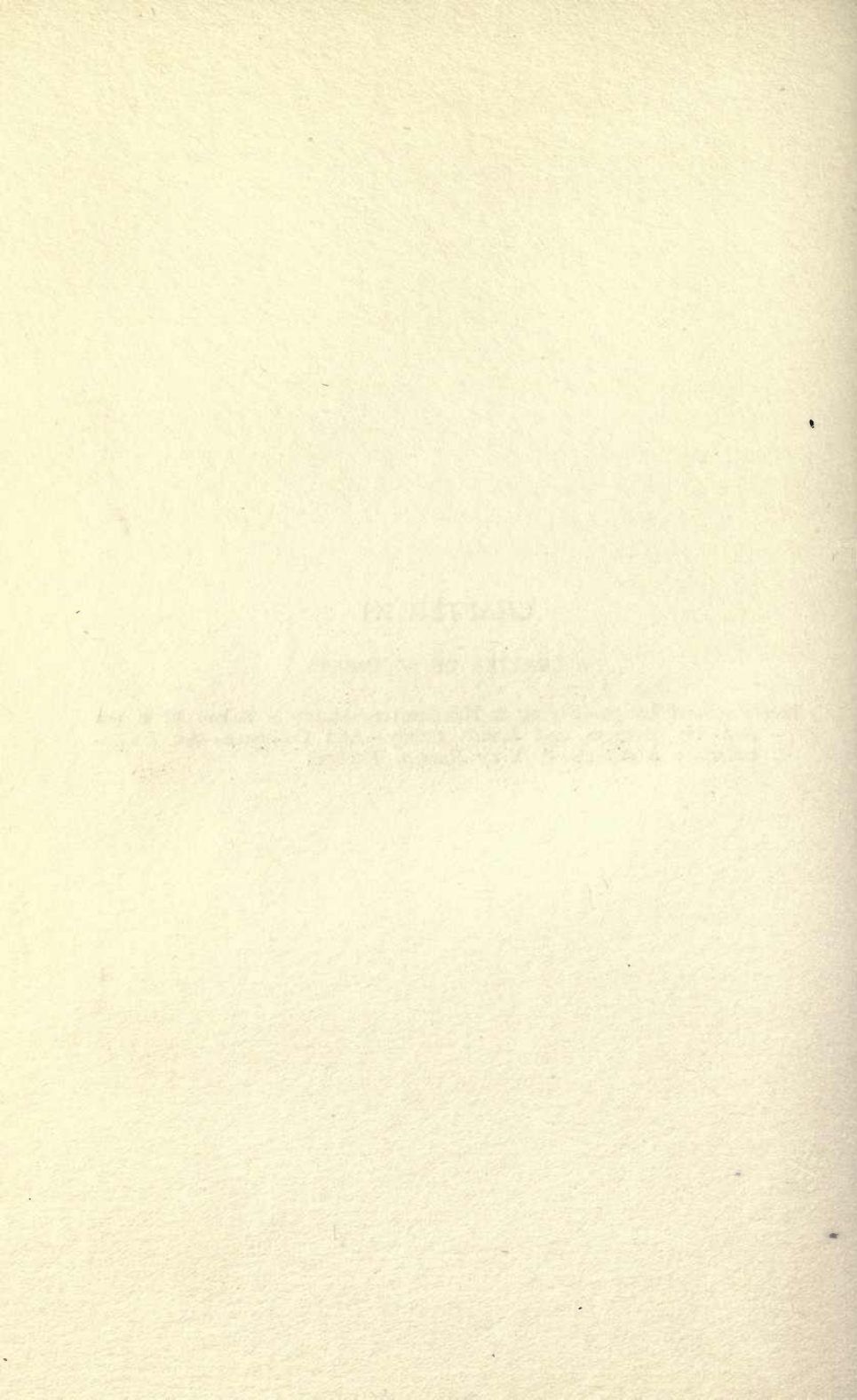
Some days later, on Wednesday, March 11th, Harry appeared in Melbourne, smiling and unperturbed by the previous unfortunate occurrence. " There was," he said, " nothing at all about the accident of an alarming nature ; I was never further from a serious smash-up in my life. It was not a flying accident at all, for the mishap occurred after I had landed, when the machine was nothing more or less than a motor-car. I was in danger of running into a fence, and I did the only thing possible to avoid such a calamity, which would have meant serious damage to the engine. There are no brakes on the landing chassis, which was broken simply because I brought the machine up so abruptly. The biplane will be ready by Saturday, when I shall carry several passengers. Many more applications have been received, and I have as many as thirty contracts for flights at £20 a time."

There was a considerable amount of flying in Australia in 1914. During May a Farman seaplane was being demonstrated at Sydney. One of the famous French pilots, Guillaux, was flying in Australia in April. He looped-the-loop for the first time there, and aroused considerable interest, following on Harry's demonstrations.

CHAPTER XI

A CHAPTER OF ACCIDENTS

Harry's First Loops—Flying to Manchester—Harry is Taken Ill in the Air—He Returns and Lands Safely—And Collapses—An Extraordinary Accident—A Very Narrow Escape.



CHAPTER XI

HARRY got back to England on Saturday night, June 6th, 1914, and on the Sunday afternoon was at Brooklands, flying both the two-seater Sopwith and the Tweenie. He won an impromptu race with Sippé, who flew a Bristol. "Aeolus," commenting in *Flight* on June 12th, said: "Place Hawker anywhere where he can get his hands on a machine, and you simply can't keep him on the ground."

On Tuesday, June 16th, ten days after his return from Australia, Harry looped-the-loop for the first time, both with engine on and off. He was flying the 100 h.p. machine. On the Wednesday he did twelve loops in succession. These displays were the forerunners of the looping exhibitions which Harry arranged to give at Brooklands every Sunday afternoon during the summer on the 100 h.p. Sopwith Scout.

Harry flew to Hendon on the 100 h.p. machine on Saturday, June 20th, and on returning to Brooklands in the afternoon he gave another looping display. On Sunday, too, he was looping again.

While the Hendon-Manchester-Hendon race was in progress on Saturday, June 20th, Harry had the misfortune to be taken ill in the air. In this race he was the scratch man, and, being favourite on the 100 h.p. Gnome-engined Sopwith, it was a great pity he had to give up.

He left the aerodrome at a high speed, about 25 minutes after the previous starter, Lord Carbery. No news of his progress was received, but an hour later he was seen approaching Hendon again. He made a perfect landing, but was in a state of collapse, from which he failed to recover for several minutes. Actually he had

been as far as Coventry, and had had a fairly rough passage. This affected his stomach, and, after getting into dense fog and feeling he would be overcome if he continued, he decided to return. His action in not having landed at once may be criticised, but the fact that he got back safely, if almost prostrate, is the best evidence that he knew what he could do. Moreover, he had not experienced a forced landing with this fast machine, therefore he could hardly be expected to know its capabilities in this respect.

Dr. Leakey, who attended Harry on this occasion, expressed the opinion that he was suffering slightly from concussion due to partial rarefaction of the air about the pilot's seat of this fast machine. This would tend, he said, to cause tympanum of the ear while the roar of the motor compressed the air.

On Saturday, June 27th, an Aeroplane Handicap was held at Brooklands over a nine-mile course. Of the twelve machines entered, the slowest had a flying speed of 35 miles per hour, while the fastest, the latest Sopwith piloted by Harry, was capable of 111 miles per hour. But he was too heavily handicapped, and the race went to Mahl, who was flying the 80 h.p. two-seater Sopwith.

The same evening Harry had a very narrow escape. About 7 o'clock he took up the 100 h.p. (monosoupape) Gnome Scout, and at 1,200 feet looped-the-loop with the engine shut off. The loop was effected properly, but when he had got the machine back on what seemed to be an even keel, it got into a spinning nose-dive. Seen from the paddock, the machine first dived vertically and then began to spin round and round about its line of descent, descending comparatively slowly. After a while—only a few seconds that seemed ages—the tail swung out and the dive resolved itself into a spiral form. Finally the machine crashed on its right wing in a coppice. The whole flight was described as 'looking like a leaf falling,' and the fact that Harry landed on the wing undoubtedly broke the fall and saved his life. As it was, he was found, standing by the machine, in the thick undergrowth, none the worse for the shaking.

The following account of the accident was given by Mr. C. G. Grey, in the *Aeroplane*, July 1st, 1914.

"One of the most extraordinary accidents in the history of aviation, and a still more extraordinary escape from death, occurred to Mr. Harry Hawker at Brooklands on Saturday evening last. Mr. Hawker went up about 7 p.m. on the Sopwith Scout (100 h.p. monosoupape Gnome), and at about 1,200 feet he made one of his famous loops with the engine cut off, by diving steeply and then pulling back. He made the loop perfectly, but over the Byfleet road, and as he came out of it, he started a vertical dive with a spin in it.

"When I first caught sight of him from the paddock he was doing a perfect 'tourbillon' spin, *à la Chanteloup*—that is to say, the wings were revolving round the centre-line of the fuselage, and the machine was standing vertically on its nose. It was coming down quite slowly for such a fast machine, the pace being nothing like its ordinary diving speed. Then the tail seemed to swing out and the vertical path became an irregular spiral to the right, till finally the machine seemed to be doing a banked turn with the body nearly horizontal and the left wing up. The dropping speed had by then decreased noticeably, but it was obvious that the machine was not under proper control, for it seemed to 'slash' or 'flutter' round like a falling leaf. At this point it disappeared behind the trees on St. George's Hill.

"As quickly as possible a number of people from Brooklands got to the spot, and after considerable difficulty found the machine on the ground in a thick coppice, with Mr. Hawker standing alongside it absolutely unhurt. A few minutes afterwards he went off back to Brooklands, sitting on the carrier of a motor-bicycle, leaving the machine in charge of the Sopwith machine crew.

"Apparently the machine had struck partly sideways and partly nose on into the top of a tall tree, into which it had flown

rather than fallen. It had then fallen vertically, bringing several big boughs of the tree with it, and had finally sat down right side up, flat on its chassis, on top of sundry saplings and undergrowth. The wings had folded up neatly as it fell through the trees, and had come down like a lid on the cockpit—how Mr. Hawker got out is a mystery. The chassis had telescoped into the front of the fuselage. The cowl was dented and bent, but not torn off. Two or three valve tappets had been wiped off the engine, which was evidently revolving when it struck the trees. The propeller was broken at the ends, but not at the boss. The fuselage aft of the tank, with the elevator and rudder, were absolutely untouched.

“The first thing we did was to test the controls, and then found the elevator and rudder working perfectly. The warp wires were also uninjured, so there can be no question of controls going wrong. What, then, was the cause of the accident ?

“For some time previously Mr. Hawker had been proving the extraordinary stability of this machine. He used to take her up to 1,000 feet or so, switch off his engine, and let the machine glide. Then he would pull his elevator slowly back to stall her. With the elevator hard back she would neither tail-slide nor dive nor side-slip. She would simply descend on an even keel like a parachute, but moving gently forward and rolling slowly first on to one wing and then back to the other. Occasionally, in a gust, she would slide to one side, descending sideways at about 45 degrees, which is hardly a side-slip. On pushing the lever forward she would pick up her gliding angle promptly. In fact, she seemed absolutely stable in every direction. She recovered promptly also from a straight-dive which was almost vertical.

“Now comes this smash, and it is worth studying, for according to the rules of the game the machine should have come up when the elevator was pulled back. During the afternoon Mr. Hawker had been arguing with an officer of the Naval Air Service about the need for more vertical surface aft

on these small high-speed Scouts. The officer in question held that, owing to the short tail, if a Scout started to spin round its own nose it would never come into control again.

"When Mr. Hawker disappeared behind the trees he undoubtedly had his elevator lever hard back, and, as he was then banked well over to the right, his elevators were acting, if they were acting at all, as rudders, and so were forcing his tail round and increasing the spin. In this position the rudder should act as an elevator and throw the nose of the machine down, so causing a straight nose-dive from which it should be easy to recover. Mr. Hawker tells me that he tried to do this, but could not get it round against the air pressure, and he ascribes this to the rudder being of the unbalanced type. He thinks that with a balanced rudder and no fin he could have done it.

"Also, he admits that if he had pushed the elevator forward as soon as he found the spin developing, and had made a straight dive, he could have pulled up straight, but he thought he was too near the ground to risk doing so.

It must be remembered that the Caudron on which Chanteloup does his 'tourbillon' dive has a tail that warps in unison with the wings and that it has two big balanced rudders, so that it really has more control than the Scout class, and as it is a much slower machine it changes its attitude in a much shorter distance even if it takes the same length of time to do so. Still, it looked to me as if Mr. Hawker was getting the machine under control just as she disappeared, and I believe that if he tries the experiment again at 3,000 feet (no one should try experiments lower than that), instead of about 1,000, he will have come into control at 1,000 or so.

"Anyhow, he is very lucky to be alive, and only for that opportune clump of trees he would not have been. Still, to please the Navy it might be worth while trying one of the Scouts with a bigger rudder and fin—and a proportionately strong rudder tube, just to avoid B.E. habits—so as to see

how it affects their normal flying. If it does not slow the machine appreciably, it might be well to adopt a larger size simply to give extra directional stability and control, and simplify the flying of the type by less clever pilots.

“Has it struck anybody that there may be a very good reason for the old Antoinette system of having vertical fins and rudders exactly equal to the tail fins and elevators? An arrow with its vertical feathers differing in area from its horizontal feathers would probably steer curiously, so why not try a symmetrical ‘empennage’ on aeroplanes?—C.G.G.”

On the Sunday, the day after his so remarkable escape, Harry was giving exhibition flights at Brooklands on the 80 h.p. Scout.

CHAPTER XII

SOME WAR-TIME EXPERIENCES

Testing Production Machines—The Distinguished General and the Camel
—The Boredom of Old-Fashioned Transport—And How it was
Remedied on One Occasion—Testing a Doubtful Machine—Harry
Gives Expert Criticism—And Predicts the Performance of a Four-
Engined Aeroplane.

CHAPTER XII

HARRY was flying at Brooklands on Saturday, July 4th, 1914, when from a height of 11,000 feet he could plainly discern the Isle of Wight, so good was the visibility. A week later his machine arrived from Australia. He lost no time in assembling the Tabloid, for during the afternoon and on the morrow he gave looping exhibitions on it. These Sunday exhibitions became a regular institution, and Harry's demonstrations were frequently referred to by the technical Press as the "finest ever seen."

On Monday, July 13th, Harry flew to Farnborough and back on the Tabloid, certain parts of which had been replaced by modifications since its return from the South. The principal alterations were the application of a lateral dihedral angle to the lower planes and the uncovering of the rear part of the fuselage, the latter feature resembling in some measure the practice adopted by Blériot in his early monoplane designs. These changes were made to improve the suitability of the machine for looping-the-loop.

For looping displays at Brooklands during the period July 13th to 31st, 1914, Harry received bonuses amounting to £30.

Public interest in displays of looping-the-loop was at its zenith about this time, and Harry was kept very busy satisfying the craze, until war was declared. On August 4th, the fateful day, he delivered his pet looper to the Royal Aircraft Factory at Farnborough.

By this time the Commonwealth of Australia had a flying-school in good working order and instruction had begun in earnest. It was generally conceded that the great enthusiasm which the Australians had for flying was largely aroused by the

demonstrations which Harry gave there and the pronounced views which he expressed.

So far as the public were concerned, nothing more of Harry's flying was seen for several months after war was declared, until early in March there arrived at Hendon, after journeying by air, a two-seater tandem Sopwith biplane, a development of the Tweenie and of a size intermediate to the Scout and the standard two-seater: and the pilot was Harry.

The privileged few who saw this businesslike-looking machine gleaned from Harry that it climbed exceedingly well, besides being easy to handle and comfortable to fly. Those who had not had an opportunity to watch Harry's piloting during the previous few months were particularly gratified to see him coming in from Brooklands at a high speed and exhibiting that brilliancy which characterised his piloting in happier days of looping exhibitions and race meetings.

Harry's flying visits to Hendon were very frequent about this time, partly because there was a very big training centre of the Royal Naval Air Service there, in charge of the late Commander J. C. Porte, R.N. On one occasion it was noticed he was flying for a long period far beyond the precincts of the aerodrome, and numerous guesses were made as to the cause, ranging from the belief that he had lost his way to another that his engine had stopped and he was floating about, unable to get down! When finally he had landed it was ascertained that he had merely been completing the Admiralty one-hour test of a new machine.

Some say Harry was the first pilot to loop-the-loop on a seaplane. Be that as it may, on a certain spring morning in 1915 he was out testing one of the Tabloids to which floats had been fitted. He described a couple of loops as perfect as any that could be done on a land machine.

Although most of his experience had been gained on high-powered Sopwith biplanes, Harry was always equal to the occasion when it came to flying something of a different order. Thus on a certain Sunday in August, 1915, he made a successful flight on

a single-seater Beatty-Wright biplane at Hendon. He was especially struck by the ease of handling and sensitiveness of the controls of this machine, which in a sense was not new to him, for it bore a striking resemblance to the old Sopwith-Burgess-Wright.

On June 6th, 1915, Harry broke the British Altitude Record for pilot alone by ascending to 18,393 feet. This height exceeded the previous record by nearly 4,000 feet.

During April, 1916, Harry had the honour of flying before the King and Queen at Brooklands, on the occasion of a Royal tour of inspection of the Sopwith Works.

The welfare of munition workers during the war when the strain was greatest was of the utmost importance, and no explanation is needed as to why the Sopwith Aviation Company held an athletic sports meeting in the summer of 1917. In the afternoon a Sopwith Camel came overhead, piloted by Harry, who performed what were described as "the most hair-raising stunts ever seen." At a very low altitude, so that all could see in detail, he carried out loops, side-twists, apple-turnovers, spiral dives, and other evolutions for which names did not then exist. Once or twice the machine swooped down so low that people ducked their heads. Those who recall the giant German Gotha aeroplane exhibited at the Agricultural Hall may remember that it was by a Camel that that particular machine was brought down.

Of Harry's work as test pilot to the Sopwith Aviation Company during the Great War the best record is contained in his personal log-book, or pilot's diary, although this is by no means complete and many entries are obscure, for Harry had no love for clerical work.

To reproduce this diary would occupy many more pages than the whole of my book, but the more interesting details and a statistical summary for the period 1914-1916 are not out of place. In the particular book with which I am dealing the first entry was made on July 13th, 1914, and the last on October 20th, 1916. Entries were made relating to flights made on 199 different days

during that period. The different machines flown and tested numbered 295, a remarkable record when it is realised that with no more than a dozen exceptions all the machines were brand new and put through their initial tests by Harry.

Places mentioned in his diary as visited by Harry on his testing expeditions include Brooklands, Farnborough, Southampton, Eastchurch, Hendon, Blyth, Killingholme, Yarmouth, Dover, Calshot, Montrose, Dundee, Woolston, Felixstowe, Chingford, Isle of Grain, Lincoln, Kingston, Dunkirk, Villacoublay, Coventry.

During the war several thousands of Sopwith aeroplanes were supplied not only to the British Government but also to France and other countries ; and it not infrequently fell to Harry's lot to pay flying visits to Villacoublay during the years 1915-1917. On one occasion, while Harry was there, a certain British General—who shall be nameless—came on the scene, full of his own importance and talking loudly of what he knew and of what he did not know. The subject under discussion was the Sopwith Camel, a machine which Harry loved to fly and believed to be well-nigh perfect, despite adverse criticism occasionally directed against it. The General said he had had a good deal of experience of the Camel, and that he found great difficulty in getting the machine out of a spin, which, of course, was a serious matter.

In an undertone to a colleague, Harry said : " I don't believe he has ever flown one." He then ordered a Camel to be brought out from the sheds and extended to the General an invitation to make a flight with him. Having carried the " Brass Hat " about 2,000 feet up, he put the machine into a right-hand spin, from which he did not attempt to recover until within but a few hundred feet of the ground. Instead of landing and permitting the General to stand on *terra firma*, he went up again and repeated the manœuvre, but with a left-hand spin this time. Harry got out of the machine as if nothing untoward had happened. He made no comment ; but those who witnessed the incident affirm that the way he looked at the General spoke volumes ; and as for the



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OUR HOUSE AT HOOK, SOON AFTER NEWS OF HARRY'S RESCUE FROM THE ATLANTIC.

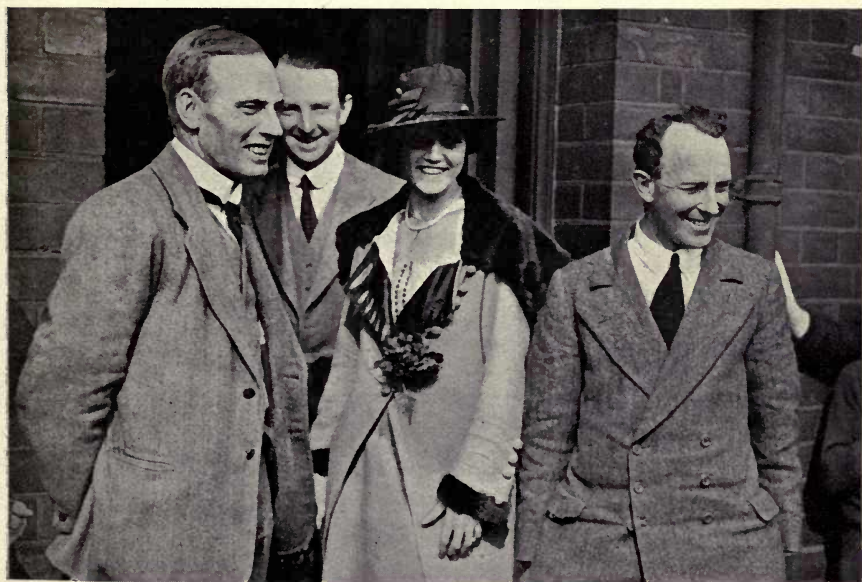


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HOME AGAIN ! HARRY AND GRIEVE AT GRANTHAM STATION, AFTER THE ATLANTIC FLIGHT. MR. SOPWITH IS STANDING IN THE DOORWAY.

General, well, he suddenly discovered he had to go off and inspect other sheds!

The episode seems not to have ended there, however, for within a day or two the officer in charge of the Villacoublay sheds (the friend to whom Harry had confided in an undertone) was requested to report to the controlling authority there, who made serious complaint and requested him to write a letter of apology, containing assurances "that Mr. Hawker would not do this sort of thing again." It appears that just before Harry had carried out the stunts with the General there had been an epidemic of crashes through foolish, inexperienced young pilots stunting too near the ground. Harry was therefore chosen as the victim for chastisement, an action which caused him and his friends much amusement.

On one occasion it was necessary for Harry to go over from England to Villacoublay by boat and train, a journey which to anyone, aviator or not, was a miserable proceeding during the war. It is said that he arrived at the aerodrome abusing everything to do with the sea, the ships on it, the French railways, the railway officials, and everything connected with rail transport. Finally he explained that he must have a machine on which to fly back, as it was the only way of getting about in reasonable comfort. How his want was satisfied provides an interesting story.

For some time the French had been in a very parlous state in regard to fighting machines, in consequence of which the Sopwith representatives at Villacoublay applied to the Air Board to let them have a Camel to submit for tests. The request was complied with, and instructions were sent from London to G.H.Q. at Marquise for a Camel to be detached from store and sent to Villacoublay. A quaint old ruin turned up, that had about as many flying properties as a tea-tray: the engine, a subcontracted Clerget, was described as "simply a collection of ironmongery," and, taking the machine as a whole, it was just possible to stagger about in the air if one knew a lot about flying.

Needless to say, the machine was of no use for its intended purpose, namely, for demonstration purposes before the French Government, and in consequence it had been rotting in the sheds for months.

When Harry asked for a machine on which to make his return journey, he was told that this was the only one available, and its history was recounted in detail. Nothing daunted, he went and had a look at it, and, after a few minutes' examination, he expressed the opinion that as apparently it had some indication of having been an aeroplane, he thought, with care, it might be flown to London; and anyhow, anything was better than boats and trains. He took the machine up and found it unsafe to fly in its existing condition, for the engine very nearly came out of its fixings.

As it happened, there were one or two experimental Sopwith $1\frac{1}{2}$ Strutter biplanes, the property of the French Government, in the sheds, and as the authority in charge decided that something very serious might occur if Harry did not fly back, he ordered the engine from one of these machines to be installed in the decrepit Camel.

Harry set out for England in the Camel next morning in filthy weather, but it was not he who had the "hump," for those at Villacoublay had intermittent spasms of what they called "heart disease" during the next twelve hours, as they could get no news of his safe progress or arrival.

Really, they said, they had not the least anxiety, for they had unbounded confidence in what they described as Harry's uncanny capacity for getting out of trouble. Nevertheless, there were considerable expressions of relief when news turned up that he had landed safely. During the flight he had three forced landings owing to failure of petrol feed; and he pulled out sundry odd bits of inner tube and rubber piping from his tank. How they ever got there was never discovered, but Harry regarded it as all in a day's work, and a subject of amusement rather than annoyance.

Mr. Alan R. Fenn, a colleague of Harry's and French representative of the Sopwith Company at that time, to whom I am indebted for some of these reminiscences, in a recent letter to me wrote :

"One other little thing that occurs to me is concerned with the Dolphin. You will remember that we converted the 200 h.p. Hispano-Dolphin to take the 300, and this work was done in Paris, all more or less by rule of thumb. I then asked Harry to come over and look the job over and fly it, if he thought well, and generally to see if it was all right.

"This was an extremely important matter, not by any means solely from the point of view of the Sopwith Co., but much more from the point of view of the French and American Armies in the field, who had then no fighting machines coming forward for the 300 Hispano at all.

"When Harry arrived and I pointed out to him that he must not be too particular, explaining to him the very serious position of matters, he did not hesitate for a moment, but took the machine straightaway in the air, and as there was some little question as to its strength, he gave it a thorough good rolling, spinning, and diving, just to make quite sure it was all right.

"It was so characteristic of the man in showing his complete absence of fear, even when there might be a doubt in his mind as to the capabilities of the machine. As a matter of fact, when this machine was stressed, it was found to be very seriously weak, and before it was put into production it was, of course, stiffened up.

"There is one other characteristic little incident that occurred as illustrating his outspokenness when he knew a machine was not right.

"I took him to the sheds of a certain very famous designer and constructor at Villacoublay to show him the new machine which had just been offered for test to the Technical Section of the French Government, and was supposed to be going to do all sorts of wonderful things.

"It was a weird affair, and its designer and constructor happened to be in the shed at the time. Harry had a careful look over the whole machine and made one or two caustic comments to me. I then introduced him to the designer, who was a fairly tall man, and Harry, looking at him squarely with his brown eyes, enquired which way up the machine was intended to fly!

"It was a tense moment, but Harry's obvious sincerity completely disarmed the designer, and they went into a discussion of the pros and cons. Unfortunately I have no capacity for describing incidents of this sort, but it really was very comic, for it never occurred to Harry that his remark might cause offence: the design was wrong, and that's all there was to it!

"I need hardly say he was correct in his views, as the machine never did anything except kill a couple of people: which was what Harry said it would do.

"On another occasion there was a big four-engined Blériot. Harry was on the field when this machine crashed at its first flight. The pilot, I believe, was paid one thousand francs for every minute he remained in the air. Harry was aghast at the whole machine and that it should ever go into the air. He foretold precisely what happened when it was flown.

"The tail twisted off, and the machine, after falling like a stone, caught fire.

"Harry's visits were very much looked forward to at Villacoublay, and among the French pilots he was a source of considerable admiration for the brilliancy of his work and his profound knowledge of air work generally. Everybody turned out when they got to know that Hawker was in the air."

CHAPTER XIII

A MOTORING HONEYMOON

Harry to the Rescue—A Game of Cards—Keeping an Appointment—
Twenty-four Hours too Early!—A Provisional Engagement—Marriage
—Gas-bag Motoring—A Strained Back—Faith in Christian Science.

CHAPTER XIII

THERE must have been very few moments in Harry's life when he did not thoroughly enjoy himself, and since the time when I first met him in April, 1915, stranded in a little light car which I used to drive in those days, his cheery optimism has helped him over disappointments and dangers which would have overcome a less buoyant nature. Some few incidents of the intimate side of his character help to show how he took life.

One Sunday in April, while driving with a school friend through Richmond Park, we came to a sudden standstill halfway between the Kingston and Richmond Gates. Before starting that day I had seen that the boy had placed a spare tin of petrol in the back, and I had put this petrol into the tank before leaving Kingston. My knowledge of cars extended very little beyond the amount it took to get this particular light car along, so any stoppage was the source of much anxiety if it happened to occur far from the reach of assistance.

I commenced to look for the trouble in the carburetter, but this seemed to be getting a proper supply of petrol. I dare not look so far afield as that mystery the magneto, and I began to look upon the person who could locate the cause of a stoppage almost immediately as a kind of wizard; there seemed so many things that might happen. While I turned the starting handle hoping that the car had forgotten its trouble, a Grégoire came by in which were two men, and it was a sign of awkward youth that I resolutely refused their proffered assistance, regretting it as soon as the car was out of sight. Presently I noticed the "petrol," dropping from the carburetter when I flooded her, instead of quickly disappearing into the ground, had accumulated into a

puddle, and then the bright idea at last struck me that the tank had been filled up with nothing but water. I let all the contents of the tank out and resignedly settled down to wait for a passing car whose driver had a tin of petrol to spare. One or two passed, but we were unable to obtain petrol from them.

Then the Grégoire returned, and this time pulled into the kerb. The driver, whom we were soon to know as Harry Hawker, got out and said, "Was it petrol after all?" Rather surprised at this very lucky guess, we enquired as to how he got his knowledge. "If a girl breaks down," he said, "she will invariably take everything down that is detachable before she looks into the petrol tank"; and although this was not quite fair in our case, it was characteristic of his almost uncanny gift of being able to discern what was wrong with a car almost without seeing it. I explained what had actually happened while Harry was filling our tank from his spare tin. We exchanged cards, or, rather, it would have been an exchange had not Harry, after a lengthy search in many pockets, found he had left his case at home, and so wrote his name on the back of the other man's. He had a nervous, offhand manner all the time, and although he made one very unconvincing effort at a compliment on my knowledge of motor-cars, he seemed genuinely relieved when I let in the clutch and with many thanks drove away.

But this did not prove to be the end of the episode, for the following Sunday morning brought me a telephone message from the "Police." Vaguely wondering how I had broken the law, although when one drives a car one gets on quite a familiar footing with the police, I was surprised to hear that it was our rescuer of the previous Sunday, who, with a sort of boyish enthusiasm, said he had bought a 27-80 h.p. Austro-Daimler car during the week and suggested I should come and try it. So we four newly-made friends set out, and this was the first time I drove a real motor-car. It was characteristic of Harry's good-nature that each car he had—and he had many during his lifetime—he was not only willing to let me, but pleased that I should want to drive it, and those who

have a kind of love for their cars will know the effort required to let others handle them.

Every Sunday during the summer we continued these drives without the knowledge of my parents, until these meetings were discovered, as such meetings usually are sooner or later. After a while I managed, by telling stories of his great gallantry, to persuade my mother to ask Harry and his friend Basil, with whom he "digged," to dinner. After dinner, my father, mother, and an old friend wished to get up a hand of whist, and Harry volunteered to make up the fourth, and sat down as though he enjoyed it. There were some young people there that night, and we all trooped off into another room to indulge in more enlivening pastimes. Whether he thought that to play a quiet game of cards with the older people would make a better impression than playing such childish games as we others were indulging in, is a debatable question; but I am not sure he would not have had more success had he joined us, for, as I afterwards learned, he loathed cards, had played whist only once in his life before, and, needless to say, played a very bad game. However, his simple frankness found favour and we were allowed to continue our Sunday afternoon drives.

Christmas drew near, and mother, on finding that Harry and Basil would be alone in "diggings" for the festive season, invited them to come and spend Christmas with us. "Now, don't be late," she admonished them as they said good-bye on the Sunday before. "We have dinner at four o'clock on Christmas Day." They certainly were not late, since they arrived at four o'clock on Christmas Eve, twenty-four hours before they were expected! Dad was the only one at home, and I arrived home at six o'clock to hear his recital of their brief call. I guessed at once they had made a mistake in the day, but Dad refused to agree with me. The incident was never mentioned to Harry until after we were married and about to spend Christmas in my old home. Then I said to Harry, as we were packing: "We will not make a mistake in the day this time!" "Good gracious!" exclaimed Harry,

"do you mean to say my wonderful display of tact failed on that other occasion? As soon as we arrived, and I saw we were not expected, I guessed we were a day too soon." He went on to tell me that he got out of a difficult situation by convincing Dad it was a time-worn custom in Australia to make a call upon people the day before you went to stay with them. Then he thought of the tell-tale bags in the back of the car. He fixed Basil with his eye, and in a meaning voice directed him to go out and turn off the petrol as the joint leaked—and Basil took the tip. When Dad went out a little later to speed his two guests, the bags were hidden beneath a large fur rug. Now, Basil felt the cold intensely in England, but Harry not at all. So it must have been a study in expressions when, in answer to a suggestion from Dad that they should throw the rug over their knees, Harry assured him it was not necessary as neither of them felt the cold in the least!

In those days of war, when Harry was very busy seven days a week testing new machines, sometimes at the rate of ten a day, and working half the nights on designs for new ones, it was brought home to me, on Harry's enquiry as to how I filled in my time, how little work I did to justify my existence. "I bet you I will get some work within a fortnight," I told him, and, after arranging the nature of the bet, he took me on.

Then followed a hunt for the elusive work. I had not the slightest idea where to begin, as I had no special qualifications. However, I applied at a Labour Exchange, an experience uncongenial in the extreme. I was asked to fill in some forms stating my qualifications and experiences. This did not take me long! I was then asked to fill in some more, and, after this, was told to go home and await their communication.

In a few days I had a letter asking me to call on the Monday at the offices of the National Health Insurance Commission, Buckingham Gate. There were only three days more before the expiration of my bet with Harry, so I was only too glad to keep this appointment. I could have laughed aloud when Mr. Alfred Woodgate,

afterwards affectionately known as the 'Archangel,' turned to his colleague, Mr. Bailey, under whom I afterwards worked, and observed: "Let me see, Bailey, you are wanting someone at once, aren't you?" and I was told to consider myself engaged as from the morrow. I wondered whether I ought to say "Thank you, Mr. Woodgate," or "Thank you, sir." Eventually I just said "Thank you," and departed very elevated. Perhaps the greatest joys and sorrows of my life hung upon the words, "Consider yourself engaged from to-morrow," for that same evening Harry and I became provisionally engaged to be married. I say provisionally, because at that time, being still in my teens, and taking into consideration the uncertainties of war, I did not want to be tied completely.

The Sunday rides were continued, generally to Brooklands, where there was always something for Harry to do. The Austro-Daimler had been well "hotted up" and was now capable of 80 miles per hour, and we spent many an exciting time "strafing" anything willing and able on the road. I often wonder what manner of curses we drew on our heads from nervous pedestrians who seem to enjoy ignoring the footpath and walking with their backs to traffic, or those twenty-mile-an-hour motorists who love the very centre of the road and hate to move. I remember in particular an elderly gentleman walking slowly along the road by the side of which was a perfectly good and empty footpath, who, dropping his hat and stick, remained firmly planted on both feet and stared at us in open-mouthed amazement and disapproval as we whizzed by. Certainly for his especial safety it would have been better had we indulged in our turn of speed on the footpath. But I am sure Harry was less of a danger on the road driving at 70 miles an hour than those, who cursed us most, were driving at 20 or sauntering about in the middle of the fairway. These little trips did not cease, and I well remember the very last Sunday Harry was with me he said: "Let's go out alone like we used to do and not take anyone with us." We did so, but then we met some friends at tea-time!

I often wonder if the early days of our engagement would have been less stormy had I been more nearly Harry's intellectual equal or else a different type of girl altogether. But Harry had no time for the "take-care-of-me" kind of female, and I believe he thoroughly enjoyed our heated arguments. After we were married we drifted into an always interesting and exciting existence, and life was well worth living.

We were married at St. Peter's Church, Ealing, on November 14th, 1917. Just before the appointed hour, I sent a message round to the church to see if Harry was there, as he so easily forgot the times of his engagements. But his brother, who was to attend him, had rounded him off the aerodrome at Brooklands, where he had completed the testing of a machine in the morning, and hustled him into the awful clothes and awful hat customary at wedding ceremonies, which he wore for the first time. My first sane memory after the ceremony and reception were over was of a most appalling noise issuing from the room in which Harry was changing, and eventually some object was kicked into my room, which turned out to be the poor old hat in tatters!

For months Harry had been saving petrol from all quarters,—the restrictions on that commodity being very severe then—in order that we might spend our honeymoon on a motor tour. But motoring with petrol became quite prohibited, so Harry had a large stand built on the Grégoire to hold a gas-bag. We tried it a day or two before we were married and found we could run a matter of about four or five miles on the whole bag, which did not look very hopeful for a journey down to Cornwall. Anyway, we started with the gas-bag up and the petrol tank full and a few extra tins of petrol in the back, since it was our intention to proceed by petrol except for an occasional mile or two by gas for appearances' sake. We filled up at Exeter, and arrived at Launceston the next day in time for lunch. A dear old waiter, very interested in us and our fearsome erection, related for our benefit some incidents he remembered connected with the appearance of the first motor-car in Launceston. He asked us how far we could go

with a bagful of gas. Harry said : " Oh, eighty or ninety miles." The waiter said someone had told him that gas-bags were no good, as they could only do about ten miles. But Harry informed him we carried compressed gas in an aluminium case, which assertion completely satisfied him and left him with the idea that he had just seen the last word in gas-propelled vehicles ! The gas-bag was a nuisance, however, and we should have done just as well without it, despite the remark of the " bobby " inspecting petrol licences at Exeter. When he saw us coming out of the gas company's premises, he said with a grin : " Ah ! I see you have the laugh of the petrol restrictions ! "

All the horses shied at the wretched thing, and we were hung up half an hour in a very narrow lane near Penzance owing to a horse which had shied, fallen, and refused to get up again through fear of our conveyance.

It was at this period that Harry's back started to give trouble. A week or so before we were married he was flying a machine to France and had to make a false landing into thick snow for some trivial cause. Not being able to speak any French to explain his presence there, and being in civilian clothes, he was taken into custody by the French authorities and placed in the guard-room. He was due to arrive at his destination—Villacoublay, I think it was—before dark, so the delay was serious. He managed to get away on a passing English lorry, and with the assistance of two men he got the machine out of the snow and arrived at Villacoublay before dark. In moving the machine, he strained his back, which since his crash in 1913 was always apt to give trouble under a great strain. It did not get better, and a month later he went to bed for a time on his doctor's order. The treatment gave him no relief, so that after a fortnight he decided to get up and let his back cure itself, which, for the time being, it did.

He had no trouble of any description until two years later. One day, when he had been doing some heavy lifting in his workshop, he came in and complained once more of the pain in his back. It grew worse and worse, until he could not stoop or bend

his back at all. He was then advised to consult a famous bone-setter, who told him his trouble was an adhesion of muscles which would have to be broken away, an extremely painful process, but that when it was completed there would be no further trouble. Harry said, "Go ahead," and every week he received the treatment and every week he seemed to get stiffer and to suffer more pain. He persevered with the treatment for some weeks, often in great pain, until I persuaded him to have further advice. He consulted a back specialist in London, who, after having seen the X-ray photos of his back, gave the verdict that two courses only remained open to him. The first was to be flat on his back for two years ; the second, an operation, by which new bone was to be grafted into the spine, followed by twelve months on his back. He was told that there was no alternative to these two remedies, as if his back were left in its present condition it would gradually grow worse until he could not move at all. Poor Harry ! This was the greatest trial of his life.

A few days later he was persuaded to have Christian Science treatment, and by a strange coincidence Commander Grieve wrote to him on hearing of his trouble, telling him in his blunt way to "Give Christian Science a go." He told of cures that had been effected in the case of his own relatives, and said he firmly believed that their lives were saved through Christian Science methods. Harry read out the letter, saying : "Well, if it's good enough for old Mac, it's good enough for me !" and at once received the treatment which he had been advised to take, and made a study of the Science. The result was magical. The pain in his back went away, not gradually, but immediately, and never to the end of his life—only a year it is true—did he have any further trouble, although that last year was filled with greater physical strain—track-racing—than any other year of his life. He was able to bend his back to do anything, put on the weight which he had lost during the painful two months, and was his own cheery self again.

I have written here just the bare truths of Harry's back trouble

and cure, making no attempt to round it off with suggestions that the cure may have been the effect of his first adviser's treatment (just for the benefit of those sceptics who will smile), since it was his firm opinion that the Christian Science treatment did for him immediately and permanently what no one in whom these sceptics put their faith could do. We all know so little and profess so much, and yet ninety-nine out of a hundred Christian people will back any guessing human doctor against their God when bodily adjustments are necessary, and smile with amusement when the odd one seeks and receives his Maker's help.

CHAPTER XIV

BUILDING A 225 H.P. MOTOR-CAR

Harry Buys Two Aero Engines—And a Mercedes Chassis—Structural and Starting Problems—Myself as Rivet-Driver—We Start the Engine—And I Stop It—On the Road—Shows Clean Heels to Big American Car—And Tows a Rolls—Harry in His Home Workshop.

CHAPTER XIV

As soon as we had settled down at "Ennadale," Hook, Surrey, and Harry had fitted up his own workshop adjoining the garage, he conceived the idea of building himself a real motor-car, and with this end in view he purchased two 225 h.p. Sunbeam aero engines (one for spares) and a 35 h.p. Mercèdes chassis.

At the time we had an enclosed Talbot, the gas-bag Grégoire, and a "sports" Ford, and Harry wanted to complete the "fleet" with a truly sporting car.

He dismantled the Mercèdes chassis and then began his task of putting the Sunbeam in the frame, no small undertaking single-handed.

The first trouble was the front cross member of the frame, which did not allow sufficient room for the long engine, and for days he debated whether he would cut out the Mercèdes four-speed gear-box and substitute a smaller box of two gears or shift the member. He decided to move the member back, and in the end the frame had so many holes in it that it had the appearance of having been "lightened." However, he had all the surplus holes filled and the frame strengthened to take the extra weight. Then he got the engine in, and the trouble became the ground clearance, which only amounted to about six inches. The engine was raised a little, and although the oil-sump and fly-wheel seem perilously near the ground, no damage has ever been done. The radiator he obtained off an aeroplane, which he had nickelled, and the propeller-hole filled in with tubes. Then he started with sheets of aluminium to make the bonnet. I became so proficient at riveting that one side was left to me, which I successfully accomplished, though the length of the bonnet, about 7 feet, made

it cumbersome to handle. Messrs. C.A.V. made a special starter capable of turning it at a good speed, as it was impossible to start it by hand. I well remember the first evening we started her up. The batteries were so low that the starter would only just turn the motor over. The car was not ready for the road, so we could not tow it, and we were a long time trying all means to start it. At last, with Harry swinging for all his might, helped by what little effort the starter could manage, it started up, but on one side of six cylinders only.

With the deafening roar of an unsilenced aero engine running in the confined space of a shut garage, and with the exhaust filling the air, it became very uncomfortable to me, but not so Harry. He seemed quite content to stand and watch it. Whether he had had secret forebodings as to whether it would ever start, or, having started, whether it would blow itself up, I do not know; but he looked so impressed to see the motor running, although only on one side, that it was quite an effort to leave it to fetch some tools which he needed from the adjoining workshop.

It had been running some time, and not too slowly, when, looking round, I saw the induction-pipe was red hot. I called to Harry to come and stop the engine, but in the din he did not hear, so, rather than waste a second, I stopped the engine. After all the trouble we had had to start it, Harry thought I must be mad, until he saw the induction-pipe creaking and cracking—all the solder run.

For a minute he thought the motor was spoilt, realising that it had been running too long on one side alone.

However, off came the induction-pipe, and the next day it was brazed up and then replaced.

A few days after this saw it out on the road for its first run. It exceeded all expectations both as to speed, flexibility, and especially acceleration, and we returned home covered in mud and home-made glory. Harry had a special aluminium body fitted of his own design, one of the first aluminium bodies seen

on the road, and certainly the first real attempt at protection for the rear passengers. For some time we had a good deal of plug trouble. Continually they oiled up through running slowly. Sometimes a good fast run would clear them, but generally they had to be changed, and with twelve sparking plugs this became pretty frequent. The use of special adapters, into which his ever-favourite K.L.G.'s were fitted, completely solved the difficulty and never has the trouble recurred.

This car became Harry's most valued possession. In appearance, an ordinary powerful touring car, he loved to try her out against anyone willing for a "go."

I remember being passed on the Portsmouth Road at a high speed by a 12-cylinder Packhard, driven by a big American. We were not exactly "dawdling" along at the time, and the Packhard came for us, thinking Harry had his foot down. However, following it through the town of Kingston at the staid pace that town demands, but, happily for its finances, does not always obtain, we found the broad straight road of Kingston Hill practically empty of traffic. The American opened out, and the 12-cylinder Packhard is no indifferent "speed model." He sped away, we following closely, until well on to the hill, when Harry, without need of the rapid change down employed on lesser cars to get away quickly, put his foot down, and with a dig in the back due to the acceleration we shot ahead with half the power to spare.

At the top, the man on the Packhard came alongside and said, "Say, that's some roadster you've got there. What power is she?" To which Harry replied with his usual inoffensive bluntness, "Same as yours. Twelve cylinders, only better ones." They struck up quite a friendship, the American vowing at parting that he must get something like that to take back to America with him.

Another time, going to town to have it out with some bodyworks people who had kept a chassis of his an unconscionable long time fitting a body, and getting no satisfactory promise of an early date of completion, Harry told them they could leave it

altogether and he would take the chassis home. He had a friend with him at the time who had never driven a car in his life, and knew nothing about such troubles. Well, the car was to be got back somehow, and if this man could not drive it he "could at least," says Harry, "sit and steer it while I tow you gently."

And thus they left London for Kingston, the novice at his first steering-wheel being towed by Harry on the Sunbeam. The very natural qualms on the part of the man were testified by the state of the brakes when they eventually did get home, showing it was doubtful if they were ever released in his manful endeavour to follow instructions and "keep the rope tight."

All went well, proceeding at little more than double the lawful speed of five miles per hour for towing vehicles, until they reached Putney, when a Benz, manned by a good portion of the British Navy, started to tempt Harry. Undoubtedly the Sunbeam interested them, and they kept passing and stopping, inviting yet hardly expecting a "strafe," considering the Rolls chassis tied on behind. Still, Harry studied the feelings of his friend behind and plodded on into the open road between Putney and Kingston. At last, having just been passed like the wind by the Benz, the temptation got the better of him, and with a glance behind to notify his intention, he opened out, and up the hill he roared with his freight behind, passing the Benz with its highly-amused and excited crew like an express train. And the man behind only said two words when they arrived home to tea: "Never again."

It was never amusing to be towed home by Harry, as I know well from experience. Once at Brooklands the 6-cylinder A.C., then in its experimental stage, had broken something while on the track, and Harry offered its driver, Victor Bruce, a tow home on his own racing A.C., then fitted with a two-seater body. Just before starting, a little delay was caused by someone taking the passenger seat on the 6-cylinder A.C. for a lift home, which said seat was apparently booked by another member of a little gang of speed merchants who forgather at Brooklands, called generally

"Moir," although he has other and very nice names. The gentleman having been placed gently but firmly on his feet by Moir, he started to walk up the hill from the paddock towards the gate.

Harry, having tied the six-cylinder on behind with a bit of thin string he had found lying about, we started off, accelerating to take the hill. Halfway up, just passing the seat-usurper, to whom Moir, standing on the seat that he could be better seen, was bowing with that courtly manner lost to us centuries ago, the string broke through the jerk in changing gear, and the bow had a sudden and undignified ending. However, in a very up-to-date manner, the gentlemen assisted in replacing him, and the rest of the homeward journey, with the same string, only much shorter, leaving a couple of feet between the two cars, was of sufficiently diverting a nature to remedy any discomfort that might have been felt from the bruises. Harry and I being very late for something that night, we hurried, making a run home in record time, which time I should hate to see in print.

And yet he had very few accidents. The only one that might have had bad results, but which fortunately did not, was when driving his Austro-Daimler in 1917 with Lieut. Higginbotham, who was the Admiralty representative in inspecting the Sopwith machines, and two other men. Entering Brooklands for the flying-ground, they had just left the paddock, and in negotiating the S bend which the road takes here, at a good speed, the car turned completely over and landed in the ditch.

The three got out unhurt, but the car had to be lifted off Harry's arm where the steering-wheel had caught him. His shoulder was badly put out, necessitating his arm being in a sling. The next afternoon, in making some enquiries about some machines, he was advised not to go near Brooklands for a day or two, or he might be tempted to fly. He replied: "That's all right, old man. I put three of them through this morning, but this wretched sling is a nuisance flying; I must have it off to-morrow"—which he did, although it was very painful and took much longer to right itself. Another outcome of the incident was that Lieut.

Higginbotham the next morning lodged a humorous complaint against the Sopwith Aviation Company for trying to dispose of the Admiralty representative owing to his strictness in supervising their productions.

Harry spent all his spare time in his workshop attached to the garage, where he always had some big undertaking on hand. He had the habit of singing or whistling at his work, unless things went very wrong, when he would work in silence and it was difficult to extract a word from him. But it was when he had two or three days' work to be finished in one night that he developed that irritability which came so quickly and went as quickly which was one of his characteristics. But the occasions were comparatively rare, for generally he was perfectly happy and good-tempered during the evenings we spent in the workshop. He always worked with a rapidity which almost bewildered the stranger, and he had no patience with a slow worker, rather doing the work himself. In the winter months we decided to give up going down to the workshop after dinner, and spent these evenings reading. Or, rather, I read while Harry listened, as he could never read or write himself for any time, since he performed both in such a slow and laborious manner it was obviously no enjoyment to him. We always began with any items of interest from the current motoring and flying papers, and sometimes a long (and to me generally unintelligible) article from the *Automobile Engineer*, and then continued the book we had in hand. He was a school-boy in his taste for literature, for it was always a tale of adventure, varied by something gruesome, such as Bram Stoker's "Dracula," which he chose to be read, and we got through many books in this way.

One evening, soon after the Armistice, Harry came in and said he had been asked to fly the Atlantic with a machine which Sopwith's were prepared to build. He had always been keen on the flight, and I knew it would come sooner or later. Pamela was two months old at the time, and I had a great feeling of responsibility on her account. Harry gave me a perfectly free



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THE SCENE OUTSIDE KING'S CROSS STATION, LONDON, WHEN HARRY RETURNED FROM THE ATLANTIC. THE AUSTRALIAN SOLDIERS DECIDED THAT HARRY MUST HAVE SOMETHING MORE TRIUMPHANT THAN A CIVIC RECEPTION.

[Facing p. 198.]

choice as to whether he should go or not, and I was torn between my duty to Pam to ask him to stay and my duty to him to let him go. I tried to imagine how I should feel if another man were to fly the machine that Harry ought to fly, just because I feared the consequences. I knew I could never allow that to happen. I said: "Why should you think I want you to stay? I want to be proud of you."

So after that they went steadily forward with their preparations and were eventually ready to start for St. Johns, Newfoundland, on March 28th, 1919. Harry and Commander Grieve in a preliminary test at Brooklands in one day flew a distance of 1,800 miles, equivalent to the Atlantic flight, and there was no hitch, not even in the sandwiches which I cut for them!

Jury's Imperial Pictures produced a film showing Harry's trials for the Atlantic flight conducted at Brooklands prior to his leaving for Newfoundland. The operator who took this film went up in a second machine when Harry was in the air.

It was pouring with rain the day Harry started, and bitterly cold. During the preparations my courage had remained high, but when I went into Harry's room just before we left, and found him crying, I lost heart and broke down entirely. He had been putting a few last things into his bag when his feelings got the better of him. He was always sensitive and soft-hearted, and I knew he was going to be terribly homesick until he got over the other side and had plenty to do. The sight of his grief was too much for me—my courage oozed out altogether. But tears—even the tears of a grown-up man and woman—are a wonderful relief to overwrought feelings. We felt much better afterwards, and were able to look on the bright side of things once more.

I only went as far as London to see Harry off, for I could not leave our baby for long at a time. The drive could hardly be described as cheerful. I sat on the floor of the 12-cylinder Sunbeam, for better protection from the rain, as we carried no hood. With my head on Harry's knee, I longed to sleep away the next two months. He reached the station only just in time to catch

the train, and a number of friends had gathered to see him off. I recall that at that moment I wished I had married a farmer's lad without ambitions. I was thankful when the whistle blew, as I felt so very unsure of myself and was afraid of breaking down again. He was gone, and all I could do was to wait for the future to unfold itself.

I got back home at ten o'clock in the morning, oppressed by a feeling of great desolation. I could not settle to anything, and even Pam could not brighten me up.

After the first week of Harry's absence, time at home went fairly quickly. I never left home for longer than two hours, and when I did I bought newspapers of every edition, in the hope of getting news.

CHAPTER XV

READY FOR THE ATLANTIC FLIGHT

Conditions Governing the Flight—Arrival in Newfoundland—Mount Pearl Farm—Snowed Up—The Test Flight—Local Interest Intense—Wireless Difficulties—Details of the *Atlantic*—An Aerial Lifeboat—Clothing of the Trans-Atlantic Airmen—Estimates and Anticipations—Over a Ton of Fuel—A Letter for the King—An Inspection by the Governor—Storms—Prospects of a Race—Revising Plans—Grieve—Navigation Problems and Methods—Weather Forecasts—A new Starting-ground—Nervous Tension—The Aviators are Amused by Their Correspondence—A Would-be Aerial Bandsman—False Weather Reports—Services of the Air Ministry—Weather-bound at St. Johns—Harry's Confidence—Four Magnetos and a New Propeller—Address from the Mayor of St. Johns.

CHAPTER XV

THE regulations governing the competition required that the flight be made from any point in the British Isles to the United States, Canada, or Newfoundland, or in the reverse direction, within seventy-two consecutive hours. The competition was open to all persons of any nationality not of enemy origin, and no aeroplane of enemy origin or manufacture could be used. The starting-place had to be named by each competitor and also as nearly as possible the proposed landing-place. All starts had to be made under the supervision of officials appointed by the Royal Aero Club, and only one machine could be used in each attempt, which could, however, be repaired *en route*. The machines had to be marked so that they could be identified on landing on the other side. Intermediate stoppages were permissible, as also was towing on the water, and if a pilot left his machine to go on board ship he must resume his flight from approximately the same point as that at which he went on board. (The latter condition seems at variance with the one permitting towing.) It was permissible to alight on the water for the purpose of making minor repairs, and an aeroplane could lie alongside a ship for the period for making the repairs.

Harry and Grieve arrived at St. Johns, Newfoundland, on Sunday, March 28th, 1919, and immediately about to prepare for a start on April 16th, when they would have the advantage of a full moon, if conditions otherwise were favourable. It was their intention to start about 10 p.m. English time, and they expected to reach Fermoy, co. Cork, Ireland, between 4 and 5 o'clock on the following afternoon. They arrived before their rivals, Raynham and Morgan, the Martinsyde personnel. Considerable

difficulty was experienced in getting the Sopwith machine, in its gigantic packing-case, from the city to the temporary aerodrome, although the distance to be traversed was only a few miles. The roads between St. Johns and the aerodrome were in a shocking condition, and the immediate approaches to the aerodrome at the best could only be described as sodden.

The shed in which the machine was housed was of timber, 55 feet across the front, 50 feet deep and 30 feet high. The front was made up of door sections sliding between grooved panels to either side, where they were removed and laid on the ground when the machine was brought out. The replacement of these doors presented no little difficulty when the wind was high. The shed overlooked a slight downward incline, with an eastern aspect, facing St. Johns Harbour and the Atlantic Ocean, neither of which, however, was visible from the aerodrome. The name of the place was Mount Pearl Farm, four miles west of St. Johns, and was the largest area of cleared ground in the vicinity. It was rough, uncleared ground that made it difficult to get the machine from St. Johns to the aerodrome.

For a distance of about 100 feet heavy stone was spread in front of the shed to facilitate handling of the machine. When only quarter filled with petrol about 20 men were required to wheel the machine on the aerodrome.

On April 7th, there was a very heavy fall of snow followed by a twelve-hours' rainfall, which effectively combined to turn the Mount Pearl Aerodrome into a mud-bath, thereby preventing any test flights being made for several days. Thus delayed, Harry and the Sopwith personnel were able to take it more or less easy in erecting the machine. The work was soon completed. The Ford car which they had at their disposal became stuck in the snowdrifts more than once. Attempts to drain the aerodrome by the digging of trenches were made. Inexpediting the installation of the wireless on the machine, the staff of the Admiralty wireless station rendered considerable services, for which Harry was very grateful.

Harry made the first flight with Grieve on Thursday afternoon, April 10th. Leaving the ground at 4.40, he ascended to 3,500 feet, flying above St. Johns and Concepcion Bay, where he carried out some high-speed tests, during which well over 100 miles per hour was attained. He landed at 5.30. But for the fact that the mud due to the recent heavy fall of rain had been hardened by frost, this flight would not have been possible ; and, as it was, the wheels sank into the mud considerably when the machine landed, in spite of the fact that Harry had lightened the load as much as possible by carrying a minimum quantity of fuel.

So far as concerned the engine, the test flight was entirely satisfactory, and the only trouble with the aeroplane was a slight bending of the rudder, which occurred as the machine was leaving the ground. Considering the state of the latter, it is a matter for surprise that more damage was not done. The wireless transmitter was put out of action owing to the fan, by means of which the generator was driven, being of unsuitable dimensions and turning too fast. As regards the actual flight, all was nearly lost ; for when the machine was leaving the aerodrome an unusually strong "bump" nearly drove it into a cluster of trees. Crowds of people in the streets of St. Johns congregated to watch the trial flight, which, incidentally, was the first ever seen by the majority. The interest was so great that even the Senate, or Parliament, was prorogued in order that members might see what was going on.

As his rivals with the Martinsyde were due to arrive, Harry was anxious to get away as soon as possible. So well did everything go that at one time he hoped to get away on April 12th (Saturday), but the weather would not agree when the time came.

As already mentioned, the generator of the wireless transmitter was burned out, and so Harry, being unable to replace it locally, cabled home for another. In the interim, Grieve, who was inclined to favour a smaller type of apparatus having a shorter radius of action, procured a "Boy Scout" set for use in case the new generator ordered from home did not arrive in time. The absence of wireless "sending" apparatus would certainly minimise their

chances of safety in the event of a mishap because they would be unable to summon ships to their aid by this means. Harry and Grieve, however, were at first inclined to believe that, travelling at a speed of 100 miles per hour, wireless would be of little use in making effective communication with passing vessels.

Nevertheless, one effect of the long delay in making a start was to cause them to modify their views as to the utility of carrying a wireless transmitter, for on April 20th Harry installed a small sending apparatus. This, however, proved unsatisfactory, and about the end of the month he cabled to England for a more powerful set to be sent out by the steamer *Digby* on April 28th. It is interesting to note that experiments with a directional wireless apparatus were carried out during the trials at Brooklands, but they decided to do without it on account of its great weight and because wireless was not a necessary accessory for Grieve's method of navigation.

The Sopwith machine, which was christened the *Atlantic*, was a single-engined biplane propelled by a 350 h.p. Rolls-Royce engine installed in the nose and driving a four-bladed tractor airscrew. The engine alone weighed 850 lb., and the rest of the machine (i.e., without fuel, oil, water, and pilot and navigator) turned the scale at about 2,000 lb., the total flying load at the start being estimated at 6,150 lb. A maximum speed of 118 miles per hour could be attained and a cruising speed in the region of 105 miles per hour at 10,000 feet.

The "fairing," or streamlining superstructure of the body or fuselage, was designed in the form of an inverted boat, partly collapsible, which could possibly be useful in case of emergency if the aeroplane kept afloat long enough for Harry and Grieve to launch it. The boat was made of three-ply wood. During their long wait for the weather they passed away much time by testing this boat in the inland pools in which broken ice was floating, and found it possible to launch it in less than a minute. The pair of them could walk along with the boat, drop it into the pool, and, subject to their exercising considerable caution, get

in; but to steer a course in it was very difficult owing to its unorthodox shape. The boat contained emergency rations, paddles, and flares, the latter, of course, being for the purpose of attracting shipping. Parachute lights for night signalling and smoke flares for day signalling were carried in the fore part. At the stern was carried an air-bag, which could be inflated not only to serve as an additional means of flotation, but also as a support for the collapsible upper part of the boat, which was made of canvas. A sea anchor was provided. The emergency rations in the boat were supplemented by a gallon of water in a hermetically sealed cask. In the aeroplane the commissariat included sandwiches, cheese, beef extract, toffee, and black coffee in Thermos bottles.

Neither Harry nor Grieve had much confidence in the life-boat, in spite of their skill in launching it. For one thing, they had no experience in launching it with the aeroplane either afloat or in a sinking condition. When ultimately they had occasion to launch their boat in mid-Atlantic, Harry and Grieve found that, with the machine right way up, the process presented no difficulty. To simply lift a catch and heave clear was easily done. In the cold inland pools in which they practised with their boat Harry and Grieve also tried out their patent unsinkable clothes, which, contrary to many reports, were not electrically heated.

The clothes which Harry and Grieve wore comprised heavy woollen under-garments, and two jerseys over their ordinary suits. Outside all this was a floating rubber suit with air-bags back and front, ready for inflation if needed. These safety suits were of the American Navy pattern.

In attempting the flight, Harry was of opinion that he was undertaking nothing of an exceptionally hazardous nature. Several flights of over 20 hours' duration had been made by other pilots previously, and, having confidence in his machine from his knowledge of it, he felt as safe over sea as over land. He would prefer to fall into the water than on to the land, and the boat and special clothing were a good insurance against the drowning risk.

The only doubtful factor was the estimation of the probable weather conditions in mid-Atlantic. Murky weather would prevent the use of the sextant, and might therefore impede navigation. Harry believed that at a height of 8,000 feet the conditions over the Atlantic would be similar to those over a like area of North America, which being so, he would be able to reach London in 24 hours.

It was estimated that the 350 gallons of petrol which they carried would be enough to keep them in the air for 22 hours. They proposed to fly at 10,000 feet and, if possible, maintain a speed of 100 miles per hour. As the range of their wireless receiver was 300 miles they would be in touch with the wireless station at St. Johns for three hours after the start. Nevertheless, when it came to the actual test it was very difficult to make out any message owing to the noise emanating from the propeller, and the batteries ran down too.

Naturally, with over a ton of fuel on board to carry them across, the machine would get lighter and lighter as they progressed, a fact which would be in their favour as regards "landing." Had the engine failed near the start at, say, 10,000 feet the machine would have glided down in about twelve minutes at an angle of 1 in 6, and Harry, choosing a spot at once, could have "landed" anywhere within a radius of about twelve miles. As the machine proceeded further on its course and became lighter and lighter due to the consumption of petrol and oil, the radius within which it could "land" would become correspondingly greater owing to the increasingly fine gliding angle. This fact was one to give the two pioneers added confidence, seeing that ships which under the circumstances prevailing near the start would have been beyond range, if encountered later on in the flight might have been within the gliding range.

When Raynham was asked why he had not any safety device such as boats and tank-exhausters, his reply was that he "proposed to fly the Atlantic, not to fall into it."

Sir Charles Harris, Governor of Newfoundland, handed Harry

a letter for delivery to His Majesty the King, and, with members of the Cabinet and several naval and military officers, inspected the machine on Saturday, April 12th.

Among many visitors was Harry's old friend Raynham, and Harry returned the call on the following day. The two who, six and a half years before, had struggled for the British Duration Record were now matched for Atlantic honours.

After the inspection the tanks were filled, and on the main planes seals were attached by the representative of the Royal Aero Club, Major Partridge, who gave Harry an envelope addressed to the secretary of the club, in which the number of the engine and a list of identification marks were enclosed for Harry to deliver on landing. Truly for Harry and Grieve it was now only a matter of sitting still and awaiting the pleasure of the elements. Before the tanks were filled the petrol and oil were strained six times.

A storm in mid-ocean was reported early in the day (April 12th), with westerly winds right across the Atlantic, which caused Harry to decide to start at 5 o'clock in the afternoon, but when 5 o'clock came preparations were not complete, so a further postponement until 6 o'clock was made. But the weather conditions went from uncertain to bad, and thence to worse, with a westerly gale blowing at St. Johns, and so the flight had to be declared "off" for that day. But at the first opportunity a start would be made, and this was provisionally fixed for mid-day on the morrow, Sunday.

In the meantime Harry had plenty to do on the ground, with such duties as supervising the turning of the machine on the ground while Grieve was adjusting the compass. In England betting books were being made, and Harry's chances of making the flight before May 31st were estimated at 5 to 1 against about the middle of the month, and he was first favourite, Raynham being second at 7 to 1.

The mail, consisting of about a hundred letters, included, in addition to the letter for His Majesty, others for the Prime Minister,

Cabinet Ministers, and other celebrities. "First Trans-Atlantic Aero Flight" stamps were printed by Newfoundland, but there was no demand for them at £100 each.

On the following day, Sunday, at the appointed hour, Harry was ready to start, but a strong south-east wind, heavy rain, and thick fog would not permit. Moreover, it had been raining throughout the night. At 1 o'clock the proposal to start was definitely abandoned. Harry and Grieve were now very concerned as to their prospects, seeing that rival machines were now getting ready and would probably be able to start as soon as they did, whenever the weather became propitious. The hangar was besieged by crowds of reporters, photographers, and cinema operators.

Early on Monday, April 14th, Harry cabled to Sopwith the words "Bad weather," which intimated that the flight was not likely to start on that day. As a matter of fact, after the week-end a spell of continued bad weather set in, and on Tuesday Raynham was practically ready to make his trial trip.

Harry was by several days the first to arrive and be in readiness at Newfoundland, and small wonder that when he was robbed by the weather of such valuable advantage there should be very keen competition between him and Raynham. For several days they did not come in contact very much, but when both had had time to realise that they might be held up for weeks and months, the rival crews continued on terms of most intimate friendship.

Thus one effect of the delays of Harry's departure was to increase the possibility of a race across the ocean by him and Raynham, who was ready to start without a preliminary trial if necessary in order to gain an advantage. Both crews were burning with eagerness to be first away, but they fought the contest in a thoroughly sporting spirit. They stayed at the same hotel in St. Johns and were on terms of close personal friendship. When at one time it was thought that Raynham's aerodrome might be too small for his machine to get off safely, Harry, with

characteristic grace, offered the use of the Sopwith field. They agreed that the first away should carry the mails.

The unavoidable delays in starting also served at least one useful purpose in that they provided an opportunity for Harry to review and, where necessary, amend his plans. His final decision was to head due east until striking the northern steamship route, to which he would keep, because, owing to alterations in the wireless equipment, he would probably only be able to receive messages and not transmit them. On sighting a ship he would fire a red Vérey light as a signal for the ship to notify her position. These arrangements were communicated by wireless from Cape Race to ships already on the high seas.

It was Harry's intention to fly fairly low, gradually gaining height, until reaching the Grand Banks, frequently fog-bound from sea-level up to 2,000 feet. Beyond there he expected finer weather, and would ascend to 8,000 feet, which he would maintain for the greater part of the flight, until nearer home, where he would climb to about 12,000 feet. At 8,000 feet he anticipated freedom from the impediment of fog usually very prevalent in that season, and as Grieve used clouds, not the horizon, for navigation, it was necessary to be above them. But if they were uncertain of their position at dawn Harry would decide to come down low near some passing ship or other in order to get a check on his reckoning. Arrangements were made whereby as soon as the flight was begun the Admiralty wireless at St. Johns would advise all the coast stations and ships in the Atlantic zone; and it was anticipated that general interest in the flight would keep every wireless operator on the Atlantic keenly alive to the importance of getting news of the machine.

As for Grieve, his chief concern was as to the weather conditions over the ice area from St. Johns to the Grand Banks. He conceived four weather zones between Newfoundland and Ireland, the first of which was that just mentioned, where conditions were complicated by the existence of heavy Arctic ice-floes drifting south on the Labrador current into the Gulf Stream, the fog being

caused by this confluence of currents having a temperature difference of 20 degrees. From Grand Banks to mid-ocean was an area regarding which atmospheric conditions above sea-level were very little known, but where frequent storms were reported by shipping in the early spring. Farther east was an area less notorious for violent weather changes, and beyond this the region round the Irish coast, where, on account of the complete meteorological records of the United Kingdom, the condition could be forecasted with approximate accuracy.

Although Grieve had a good understanding of weather, forecasts were useless unless the type of weather prevailing was known. This essential information, obtainable only from vessels carrying wireless, was very difficult to get, and when it arrived was generally days late. A weather chart of the Atlantic was plotted out daily by the local meteorological officer, Mr. Clements, to the best of his ability, but he was handicapped by the absence of necessary reports and had to assume a good deal. Regarding the weather during the Atlantic attempt, Grieve wrote :

"The day we flew the weather was apparently of the westerly type with a depression in mid-Atlantic a little to the southward of our course. This depression should have proceeded to the E.N.E., over towards Ireland, but apparently it spread to the northward, and we landed in the middle of it."

The first half of the journey, therefore, seemed to involve the greater element of risk, and it was a debatable point whether the great total flying load during this stage would be an advantage or otherwise. With a ton of petrol on board, the machine would be less likely to be severely tossed about than without it, and if it did not yield to the wind gusts it would have to be strong enough to resist the buffeting of the wind, which it was quite capable of doing. On the other hand, it would not have such pronounced climbing powers as it would in the later stages, when a great pro-

portion of fuel would have been consumed. Grieve¹ was of opinion that, if they safely traversed mid-ocean, information from west-bound ships in the vicinity would be of great guidance during the remaining half of the voyage. He also believed that the machine, the qualities of which they had tested thoroughly for nine hours, could easily maintain full speed for eighteen hours, which should enable them to reach Ireland; and they hoped to be able to make their landing at Brooklands, another five hundred miles from there.

In order to locate their position and lay a course which would take them to the Irish coast, just north of Valentia, Commander Grieve intended to take observations every half hour. It was Harry's intention to fly on to Brooklands without landing in Ireland if daylight would allow. He also intended to release the undercarriage soon after the start in order to conserve his petrol as much as possible. In view of the fact that the machine would have to be landed without an undercarriage it was highly important that this act should be accomplished in daylight. A squadron of R.A.F. aeroplanes was in readiness at Fermoy co. Cork) to proceed to the coast to escort Harry over the last few miles of his journey. Four magnetos were installed on the *Atlantic* on April 14th, in place of the two ordinarily carried, the risk of engine failure due to ignition troubles being thereby halved.

Heavy rain fell during the night of April 14th and the morning of the 15th, but by 11 a.m. the weather had somewhat improved. In view of the keen competition of the Martinsyde, which was by then ready for trial, Harry hoped to make a start from a less sodden

¹ Commander Kenneth MacKenzie-Grieve is the youngest son of Captain MacKenzie-Grieve, R.N., and a younger brother of Captain Alan MacKenzie-Grieve, R.N. He entered the Navy at the age of fourteen and a half and spent many years on foreign stations, Australia, China, and the Mediterranean. During the Great War he served in an armed trawler on the East Coast, and was later acting Commander of H.M.S. *Campania*, a seaplane ship, for navigating duties. In 1913 he received the vellum of the Royal Humane Society for saving life.

stretch of ground which he had discovered at Mount Pearl. Raynham's main object was to make a start at the same time as the Sopwith. Later in the day a fall of snow prevented any flying for either the Sopwith or the Martinsyde.

The new starting-ground which Harry had found was a gravel hillside to which he could draw his machine by means of horses. He expected to be able to take off down the slope. Harry and Raynham had now become so equally prepared to start that they agreed to spin a coin as to who should carry the mail bag.

On Wednesday, the 16th, snow fell heavily all over Newfoundland, making flying altogether impossible. Nevertheless, the rival camps kept a wary eye on each other, Harry being particularly on the alert to prevent Raynham stealing a march on him by an unexpected start, but really there was nothing for both parties to do other than watch and wait for the passing of the bad weather. The Martinsyde crew claimed that they could afford to give Hawker three hours' start, and catch him up after that.

Later in the day report showed that it was very problematical as to whether anybody would make a start during the week, and the weather charts indicated unfavourable conditions for several days to come. Raynham had made a trial flight on the previous day and was entirely satisfied. The moon was on the wane, and as this was a most important factor in influencing a decision to start by either party, hopes of an early start were at most slight.

On the afternoon of Thursday, April 17th, Raynham and Morgan, his navigator, made another trial on the Martinsyde. Raynham cabled to London two bets of £50 each at prevailing odds on Harry and himself.

On the morning of Friday, April 18th, the weather prospects were so good that both Harry and Raynham decided to start at noon, but before then a storm came on, accompanied by weather reports which indicated no prospects of an early start being at all possible. It was on this day that Major Wood and Captain

Wyllie left England for Ireland, in the Short biplane on which they were to attempt the flight from east to west. But their effort was terminated in its preliminary stage by an enforced descent in the Irish Sea.

Hawker, Grieve, Raynham, and Morgan supported the nervous tension of the immensely trying period of waiting with remarkable fortitude. It was a great strain, living in a highly keyed-up condition day after day; yet beyond a certain restlessness there was nothing unusual in their outward demeanour. It was easy to see that they were watching each other to guard against a surprise start. They were on the best of terms. When practically no work remained to be done on the machines they found time hanging very heavily, and how to pass the hours was a matter of difficulty.

The long delay in starting was due to lack of knowledge of weather conditions in the Atlantic rather than to the weather itself. Many crossings will have to be made before the requisite knowledge is gained, and as this knowledge is gained so will the evolution of commercial trans-Atlantic aircraft be influenced. It was only elementary wisdom for all concerned to wait for tolerable weather.

Hopes of a start being made were high on Sunday, April 20th, when the Air Ministry stated that conditions were then exceptionally favourable, except at Newfoundland, where it was still foggy, and between 18 degrees and 25 degrees west, where the clouds were low and extensive and the sea rough. At St. Johns at 8 a.m. there was a light west wind and a clear sky, and the day was very promising. If mid-ocean conditions were in their favour Harry decided that he would start early in the afternoon.

Subsequent reports, however, indicated the presence of storms in mid-ocean, and all hope of an attempt being made that day was abandoned. So Harry busied himself by installing a small wireless-sending equipment, which was later on discarded as it proved unsatisfactory. Raynham, too, would have nothing to do with appliances tending to lessen his will-power and induce

him to summon help in an emergency which might otherwise be overcome.

Pending a change in the weather, Harry tended his machine as one would a thoroughbred racehorse. Every morning he visited the hangar, started up the engine, and tested the controls to ensure that everything was in order for a "snap" jump-off in the event of the opportunity arising; while Grieve busied himself "listening-in" for wireless reports. Sandwiches were changed every morning and Thermos flasks replenished, to the delight of young urchins, who enjoyed an *al fresco* meal. During the whole of the waiting period Harry continued to be optimistic and was never really downcast by the weather prophets.

On Monday, April 21st, a strong head wind, accompanied by indications of a complete break-up of the weather, prevented any start being made and almost induced Harry to give up all hope of making a start during the month. Nevertheless, the same evening the Air Ministry announced ideal weather conditions as being prevalent. Betting odds on the chances of a successful flight before May 31st were now 7 to 2 in the cases of both Harry and Raynham.

The local weather conditions at St. Johns on April 22nd were decidedly unfavourable for flying. A severe sleet storm was raging off the coast, which would have impeded the progress of any machine, and the city and suburbs were overshadowed by a dense fog. Conditions reported from mid-ocean were equally discouraging, and the general effect of the reports led Harry to suppose that there would be no substantial improvement for a day or two. Both Harry and Grieve and Raynham and Morgan were showing increasing signs of the strain arising from the delays and the uncertainty regarding the start. They all agreed that they had come to the starting-point much too soon, but each party pleaded that the other was trying to steal a march and get away first.

While trying to pass away the time, Harry derived some entertainment from a large number of letters which arrived daily, both

from England and all parts of the American continent. These letters contained good wishes of all kinds, besides offers of assistance from inventors and weather prophets, poetry, and the usual requests for autographs in handwriting which was obviously "flapper." The gem of the collection was from an old Irish soldier in Manitoba, who asked if the airmen would have any use for the services of a cornet-player during the journey across. He said he served fourteen years in the Army as a bugler and had the honour of sounding all calls during the military ceremonies in connection with Queen Victoria's last visit to Dublin. His suggestion was that, apart from entertaining them during the flight, he could make himself useful in sounding calls or playing tunes as the aeroplane approached towns in Ireland or England. He thought "Garryowen" would be suitable to herald the arrival over Ireland, and suggested "We're Bound for London Town" as an appropriate melody after crossing the Irish Channel. He wound up by saying he would give his services gratis.

From New York came a poem in a feminine hand, entitled "The Vikings of the Air." Both Hawker and Grieve, as well as Raynham and Morgan, received copies of this effusion, which they considered displayed considerable powers of versification in its authoress, but was tactless in one part :

"Like Norsemen bold who launched their sturdy craft
On seas that stretched beyond their farthest ken,
And drank deep draughts of ocean's briny air
With keen delight, and sailed they knew not where."

The last line was considered by Grieve as casting serious aspersions on his skill as a navigator.

From an Englishwoman in New York Harry received a letter which was voted "first rate" by all members of the Sopwith party. After wishing him the best of luck on his "daring venture," the writer continued :

"I have followed the papers feverishly each day for news of your latest movements. And now the honour of the old Mother-

Country rests on your success. You have just got to be the first across the Atlantic. May God speed you on your perilous but still wonderful flight."

In a different strain was a letter received by Grieve from two young women in the cable office of the British War Mission in New York. It ran:

"Sir, do buck up, and start—we cannot stand the suspense much longer. Best of luck from two Cablettes."

Grieve's only comment was to the effect that their suspense was nothing in comparison with his own.

Excitement was keen on Tuesday, April 22nd, when Raynham announced his intention to make another "trial" flight. Although the fog prevented Raynham from carrying out this project, Harry had his machine out, suspecting an attempt to outwit him, for on the previous Sunday Raynham had declared that his next flight would be THE FLIGHT, and Harry knew Raynham's tanks were full. This episode resulted in both parties coming to an agreement not to make a "hurried unconsidered departure," and not to start unless the weather conditions were fairly settled. The local betting was by now 5 to 1 against Harry and 8 to 1 against Raynham. The weather conditions at St. Johns, around the Newfoundland coast, and across the Atlantic continued to be most unpropitious for flying, and there was little prospect of an early change. Weather experts, who expressed doubts as to the possibility of the flight being accomplished before May, said that the only day during the previous two months on which flying was possible was Friday, April 12th, when the Sopwith machine was scarcely ready and the Martinsyde only arrived. Harry was now greatly concerned over the prolonged delay and did not expect to be able to start before April 25th, or 26th.

Consternation was caused in the airmen's camp on Wednesday, April 23rd, by what appeared to be a genuine message from

the Air Ministry asking the reasons for Harry's and Raynham's failure to start. The message, which was addressed to Mr. Clements, the meteorological expert of the Royal Air Force at St. Johns, declared that all the weather reports reaching England indicated favourable conditions for a start. Harry replied that wireless reports from vessels at sea announced conflicting winds, making the start inadvisable.

The weather had not improved on Thursday, April 24th, when rain fell all day. It was discovered that impostors had been busy sending messages purporting to come from the meteorological bureaux of Canada and the United States. One such message, which advised the airmen to leave at once, said that the weather was suitable, notwithstanding the fact that it was the worst possible.

The Air Ministry, in emphatically denying having sent any cable asking why Harry or Raynham did not start, indicated that their function was merely to prepare forecasts and not to say when a machine should or should not start, this decision being within the province of the pilot and navigator concerned.

Considerable mystery surrounded the circulation of the false weather reports which held back both Harry and Raynham, who were waiting for favourable weather at St. Johns, with their petrol tanks filled and all stores on board their machines.

It appears that these reports were entirely in disagreement with those supplied by the Meteorological Department of the Air Ministry. During one spell of 24 hours the conditions were ideal and almost unprecedented for the time of year, the anti-cyclone area extending all over the route; and had the airmen started through the coastal fog they would have soon flown into bright skies and light winds. As it was, misguided by false reports from unknown sources, Harry and Raynham, greatly to the surprise of the Air Ministry, decided not to start. After this happening the Air Ministry arranged to transmit their reports by secret code and so prevent interference.

Naturally, before the matter was cleared up, Harry bitterly

resented the attitude of the Air Ministry which resulted in his receiving communications containing implied criticisms of his failing to fly when weather conditions were favourable ; for during three successive days no mid-ocean reports of any kind turned up. He could not be expected to risk a start without such information, seeing that it had to be made in the "foggiest place in the world." Having once ascended, he would not be able, in case of emergency, to regain the aerodrome, owing to the fog, and off the coast he might have had to face sleet which, if it accumulated on the wings, would soon have driven him into the sea.

April saw no change for the better, and Harry and Raynham continued weather-bound throughout the last week. On Saturday, the 26th, the fog was reported as spreading many miles out to sea. Raynham having received many mascots, including a wooden parrot, "Emma," which was built into the cockpit of his machine, Harry was interrogated as to what special charms he intended to carry. "I only believe in one mascot," he said, "and that is Grieve." Grieve, on the other hand, was carrying mascots such as white heather and a lady's handkerchief.

With the pilots straining at the leash to get away, the navigators made good use of every opportunity to improve their wireless skill. A Marconi representative gave them daily tests in receiving, wireless communication being maintained between the two aerodromes, eight miles apart. "D.K.A." was the wireless "call sign" of Harry's machine.

Chatting with the special correspondent of the *Times*, after running his engine, Harry said : "It's simply splendid ; to hear it makes me long to be up and off." He said that he had arranged to throw overboard his charts and maps with a message asking the finder to forward them to the Royal Aero Club, London, as soon as he had crossed the Irish coast. On the back of the charts would be written the time of crossing the shore and other details for identification purposes. The Ardath Tobacco Company, Ltd., announced the offer of an additional prize of 2,000

guineas to be given to the winner of the *Daily Mail* £10,000 prize for the first Atlantic flight.

During the week-end the weather conditions improved a little, but not to a degree that would warrant the making of a start. That Harry did not hope to start for at least ten days was apparent from his having cabled to England, ordering a new wireless outfit to be sent by the steamer *Digby*, which left Liverpool on April 28th.

Describing his preparations in order to avert ignition trouble, Harry said he had four magnetos, set in a series independently of each other, each giving a spark to the twelve cylinders, so that in the event of one or two failing he would still have a reserve. Discountenancing any idea of effecting repairs in the air, Harry said, "Once we leave the ground, we must fly or fall."

There was great activity on Monday evening, April 28th, when hopes of a start were high. Harry replaced his four-bladed propeller by a two-bladed one. For over three hours Raynham and Morgan stood by their Martinsyde, waiting to seize a favourable opportunity to get away. At 6 o'clock they decided to abandon the attempt. Just as Raynham had given orders for his machine to be housed for the night, Harry drove up from his aerodrome. Some good-natured chaff was exchanged.

The Mayor of St. Johns, on April 30th, presented each of the airmen with an address from the inhabitants, a cup being forwarded to each of them later.

CHAPTER XVI

ONE THOUSAND MILES OVER THE ATLANTIC

Signalling Arrangements—Temperament—A Press Tribute—The American Attempt—Just Before the Start—Parting Messages—The Start—"Poor Old Tinsydes!"—Dropping the Undercarriage—Out of Sight of Land in Ten Minutes—Over the Fog—Four Hours Above a Sea of Clouds—Grieve's Method of Navigation—Weather Not as Forecasted—Taking the Drift through a Hole in the Clouds—400 Miles Out—Cloud Banks and a Gale—After 5½ Hours—Over-heating Radiator—What was the Cause?—The Only Possible Remedy—Is Effective at First—At 10,000 Feet—Giants of Nature 15,000 feet High—A Side-wind that Became a Gale—Flying "Crabwise"—Losing Height—Clouds, Darkness, and a Doubtful Time—Nearly Down to the Sea—Dawn—Sea-sick—Looking for a Ship—The *Mary*—The Rescue—Up to the Knees in the Sea—Captain Duhn—Sighting St. Kilda and the Butt of Lewis—A Famous Signal—"Is it Hawker?"—"Yes"—The Navy's Guests—The Civic Welcome at Thurso.

CHAPTER XVI

No attempt having been made in April, the best time was expected to be between May 12th and May 19th, when the moon would be more or less full ; but Harry decided not to wait in the event of conditions otherwise becoming suitable in the interim. The general idea throughout the whole of the waiting period was to make a start between 5 p.m. and 7 p.m. (Greenwich time). It was expected that the ocean would be crossed about nineteen hours later. If he was able to proceed to Brooklands according to his intention, Harry hoped to land there about 7 p.m. (Greenwich time), i.e., 8 p.m. summer time, on the day after the start.

Grieve decided to take half-hourly sights during the passage, and, if they arrived in time, smoke-bombs would be used for ascertaining the drift over the ocean and to indicate to ships the position of the aeroplane in case of emergency. The smoke-bombs were not expected to arrive before May 8th. In the event of a mishap occurring at night a white parachute flare was to be used, not unlike the flares used by the Zeppelins over London, and visible for miles. The white flare was to be fired at once if the engine failed or if a forced descent from any other cause were necessary. But the white flare or a wireless "S.O.S." was only to be used in an emergency when the need for help was very urgent. A red flare was to be used for opening up communication with a ship.

In an article on "Temperament," published in *The Morning Post* on Friday, April 25th, 1919, Mr. H. Massac Buist wrote :

"Mechanical achievement has been pushed to such a pitch

that endurance on the part of pilot and crew is now demanded in the highest possible degree, whereas many a brilliant aerial performance that has attracted world-wide attention in the past has made the maximum demands on nerve, but practically none at all on sheer physical endurance, as instance looping-the-loop and suchlike feats. Even in the war the average flight did not try the physical endurance of the pilot in any high degree, the strain being instead on the nerve. Of course, the requirements of the Service occasionally called for prolonged efforts, but if all the flights made from the start to the finish of the campaign are considered it will be found that the vast majority occupied less than four hours. In the Transatlantic enterprise, however, we have no competitor whose calculated speed would enable him to make the aerial journey in less than $19\frac{1}{2}$ hours under the most favourable conditions.

“THE BEST PREPARATION.

“Yet it is not a matter of mere endurance, because the longest over-water flight so far projected will be attempted in most cases with machines not designed to alight on the water. In other words, on setting out, each pilot will know that his life depends on nothing less than absolute success, and is almost certainly forfeit if anything goes wrong. That realisation represents the equivalent of the strain of flying in war service, while the duration of the effort is the multiplication of the strain. But the Transatlantic enterprise will differ from war service in that the pilot himself will order himself to start, whereas in war, no matter what betide, the individual has always a realisation that a power outside himself has determined his destiny and taken responsibility off him by giving him his orders, therefore the issue is on the knees of the gods.

“Such qualifications afford the additional confidence that comes of resource. One does not, of course, mean merely that the pilot helps to rig the machine—all Service pilots are trained

to that extent—or that he touches ignition or throttle lever while the engine is running through a bench test ; instead, one means that the pilot one would naturally look to successfully to perform a feat of this sort, other things being equal, is a man like Harry Hawker and Sidney Pickles, who year after year before there was a war, through the war, and after it, takes a hand in the building of the experimental machines of the firm employing him and puts them through all their tests, as well as the standard products of the given firm—work which, regarded in all its phases, represents taking as big risks per annum in peace time as are taken by any soldier in war service, since in an experimental stage none can really foretell what is going to happen when the first of a new type aircraft is taken into the air.

“ THE TYPICAL AUSTRALIAN ATTITUDE.

“ The most consistently successful types of men at this work taken over a long spell of years are perhaps those represented by a group of three young Australians, Hawker, Pickles, and Busted, who came over here determined to realise their dreams of lives of adventure in the air on the distinct understanding that there was plenty of money in the venture. As one student of human nature remarked :

“ They don't want the Archbishop of Canterbury to hold a special service for them before they get off the ground ; they are not going to die until they have done everything mortal man can to prevent it ; if they do die, they will take it to be absolutely as natural a process as to be born ; and, in the meantime, instead of wasting their time collecting mascots and inventing fancy names for the machines they fly they prefer to do as much of the building of them as time and opportunity allow, and they see to it that the financial side of the business is so fixed up that they will not be leaving spots of poverty behind them.

“ Undoubtedly that touch of self-reliance which we associate pre-eminently with the Australian temperament will go a long way towards securing success in such efforts as the race across the Atlantic.

“ Among our home-bred pilots of the same class, too, we have many men who have acquired this habit of clear-thinking in essentials, of eliminating emotionalism from their temperament, and of always taking off their shirts to get right down to their job. Occasionally a man who is not of that temperament may score a notable success ; but if an eye be kept on the performance of flying feats year after year, and the average of each man's achievement, it will be found that the man whose name for consistent achievement year after year advances with the progress of the science of flight is one with ‘ no frills about him.’

“ WHAT MAKES FOR SUCCESS.

“ It is right that the thing should be so. These men follow on the lines of those masters by whose enterprise flight is alone possible. The late Wilbur Wright was a plain man, and his brother Orville remains so to this hour. They found that they had to kn w, and to do so much that there was no time for social life as such, even if they had had the temperament for it, which they had not.

“ You do not find Hawker and Company lounging about in clubs in the intervals between their big aviation undertakings, for the sufficient reason that they give themselves no intervals of leisure, because they are always busy working for money, which they know how to look after when they get it. A result is that they never get overawed at the prospect of any one of their aerial feats. Each is to them merely part of the ordinary day's work, imposing no more strain than any other day's work. For instance, I recollect some years ago the effect exercised on one of the best aero engine mechanics in the country on first coming in contact with Hawker :

“ ‘I tell you ’ow it is with that there ’Arry ’Awker, sir ; he’s my fancy for anythink every time. It’s like this : we were standin’ there down the Solent chattin’, and that there Tommy Sopwith was remarkin’ as nobody ’adn’t looped-the-loop on a seaplane, and mentioned a matter of 40 quid for the man as did it first on one of his machines. ’Awker, who was standin’ by, got ’im to confirm it ; then went across to his machine and started up the engine. There wasn’t what you might call more than a couple of ’andfuls of water where it was moored ; but he just bumped and splashed it into a flight, and a couple of minutes after he looped over our ’eads twice. That’s ’Arry ’Awker ; no ’alf measures, no stintin’ ; and it was the first time a seaplane had looped-the-loop. Then he brought ’er down and walked straight up to Tommy Sopwith, ’oldin’ out ’is ’and for the boodle—that’s ’Arry ’Awker, too. ’E’s there and the goods ’as to be there. I tell you, sir, ’e’s my fancy every time.’ ”

The fact of no attempt having been possible in April probably accounted for the comparative silence of the Press during the first days of May. The public was beginning to doubt whether the flight would be possible in the then immediate future. Nevertheless, Harry was by no means idle. Among other things, with Raynham, he was busy looking for a more suitable starting-ground, but, as most of the country was under the plough, their efforts met with no success. Meanwhile, the Americans were rapidly completing arrangements to make their now famous attempt to cross the ocean, *via* the Azores, in three flying-boats, with the aid of several warships as guides and refuges in case of emergency. These machines made their start at 10 p.m. (Greenwich time) on May 16th, but Harry was still delayed by weather on that day. The American route bore distinctly southward, whereas the British route was slightly northward.

When Lieut.-Com. Read in one of the American seaplanes had reached the Azores, and so accomplished two-thirds of his

journey across the ocean, Harry and Raynham felt keenly that the blue riband of aerial navigation was slipping not only from their hands but also from Great Britain. Nevertheless, they were wise enough to know that to throw precaution to the winds was to court disaster and so yield to the rival nation. The last four days before Harry's start were very trying for him under such circumstances. He was continually in touch with the weather office, only to hear of raging storms on his route and fair weather on the Azores route. At one time he seriously contemplated also flying to the Azores, but the difficulty of the petrol supply ruled this out.

In spite of many preoccupations, Harry and Grieve passed a few hours of the last few days of their sojourn at St. Johns by indulging in motor-drives, while Raynham played golf and Morgan kept watch on the weather bureau.

THE START

On the morning of the 18th there came a change. The *Atlantic* was brought out of her hangar, the petrol tanks were quickly and carefully filled, every drop being passed through a perfectly clean strainer. Oil and water tanks were filled and the machine thoroughly looked over and the engine tested. While Harry busied himself with such operations Grieve was seeing that all maps, charts, flares, smoke-bombs, and other impedimenta were in order. The mail bag having been divided between Harry and Raynham, the letter from the Governor of Newfoundland to His Majesty, the one from the Prime Minister of Newfoundland to the Rt. Hon. D. Lloyd George, and another from the people of Newfoundland to the people of England, fell to Harry's lot to be carried. In addition to letters for Lord Northcliffe, the *Daily Mail*, the *Daily Express*, and others, he also had a letter from the French Consul to be delivered to the French Ambassador in London. He was also entrusted with the medal of the American Joan of Arc Statue Society, for delivery to the British

Museum. Some dates, chocolates, and a flask of brandy for use in emergency were included in the commissariat sufficient for three days.

Harry arrived at the final decision to start not only for the reason that the weather was better, although not perfect, but also because owing to the progress made by the American flying-boats there was a likelihood of his missing a chance of getting a British machine over first. The moon was well on the wane, and any further delay would probably have meant another matter of weeks. One American machine was already known to have reached the Azores, and reports were current to the effect that two others had as well. The night before starting Harry and Raynham both agreed to set out if the weather looked at all promising, and on the morrow they received fewer weather reports than on any previous occasion.

At 3.5 p.m. Harry and Grieve were getting into their flying clothes. Ten minutes later Harry waved his arm and the chocks were pulled away. As he sped down the field he heard the rising cheers of the spectators, which were soon drowned by the engine's roar.

Before leaving, Harry was feeling particularly confident. "I have a perfect machine for the trip," he said, "and the engine is the best in the world. I am confident that we shall get across. The great problem is to find Ireland, but I have every confidence in Grieve." Grieve's parting message to friends assembled about the machine was, "See you in London."

Speaking of landing without the undercarriage, Harry said, "I expect to make a perfectly good landing, and have no fear of badly crashing the machine."

It will be remembered that Harry had changed his propeller. He believed that the four-bladed type put an undue strain on the engine. Furthermore, without the landing chassis the machine would land on running skids integral with the base of the fuselage. Assuming he could land with the two blades horizontal it was conceivable he could land and do no damage at all,

whereas with four blades the propeller would be bound to fracture and possibly lead to other damage.

Harry considered the question of weight to be of the utmost importance. Before starting he lifted Grieve's bag and enquired whether he could not dispense with his pyjamas, as he would have a long sleep at the end of his journey.

Harry and Grieve boarded the machine without feeling in the least bit "nervy." After getting into his seat, Harry asked, "How about old Tinsydes? Tell Raynham I'll greet him at Brooklands."

At 6.48 p.m. summer time (5.51 Greenwich or 3.15 St. Johns) on Sunday, May 18th, 1919, Harry and Grieve set out to cross the Atlantic from St. Johns to Ireland, and, if possible, to Brooklands, in a single non-stop flight. The weather conditions had been reported to be fairly good all the way across the ocean, and the days had been lovely at St. Johns for over a week. Visiting the Meteorological Office at noon, Harry remarked, "Hang the weather! I go this afternoon, though it leads me to the Pacific." Three hours later they were completing the final preparations, after having lunched at Glendinning's Farm with some local friends. At 3.15 p.m., having warmed up the engine, Harry opened up and sped down the starting slope at Mount Pearl for the last time. He covered almost the whole length of the ground before rising, and only just cleared the fence at the lower end. It was only by exercising more skill than is usually required in starting that he was able to keep the machine straight while going over the not too even ground. As it was, he took off in a direct line.

Everything at the start went well, as Harry intended it should. Getting off the ground was necessarily difficult, as owing to the direction of the wind and the dimensions of the ground it was essential to steer a diagonal course over the aerodrome.

During the run of 300 yards the machine lurched hazardously, bumping over the field until it struck a hummock and lifted. The wings took the air at a low swinging start, but did not swerve a hair's breadth from the chosen course.

Three minutes later Harry was soaring above the western outskirts of St. Johns, climbing steadily the while. With the sun shining on her wings, the aeroplane *Atlantic* was a glorious sight for those who had the good fortune to see her from below. Steering a steady course, ascending E.N.E., Harry passed over Pleasantville Lake and Raynham's aerodrome at Quidi Vidi at 2,000 feet, six miles from the start. Looking down, he could see Raynham and his machine surrounded by a big crowd of townsfolk.

Harry remarked, "Look at old Tinsydes with a crowd round him!" To which Grieve, who was too preoccupied to look, replied, "We've got the bulge on him."

They continued on over Bolands Hill, a rocky promontory 600 feet high separating St. Johns from the open Atlantic, where Harry could plainly discern a dozen white mountains—icebergs—having no terrors for this ship of the air. At 1,500 feet above Bolands Hill, having decided that all was well, he slipped the undercarriage. So lessened in load by four hundredweight, and with diminished air resistance, the *Atlantic* began to climb with appreciably greater speed. Five minutes later she was about 4,000 feet up, flying eastward, steady as a rock, and just passing out of sight of those who were watching with powerful glasses. As the undercarriage was being projected earthwards by gravity, Harry thought of the stimulating effect it would have on Raynham.

As the machine passed out of sight of land at 3.35 p.m., about ten minutes from the start, the signalman at the marine lookout on the hills above St. Johns reported that it was flying in a north-easterly direction.

When the start was made at Mount Pearl the weather was perfect, at any rate locally, although a fog-bank at sea was visible. There was a light north-westerly wind and a cloudless sky locally. The conditions were described by Harry as "not yet favourable, but possible."

The machine climbed very well, and after about ten minutes, when it passed out of sight of land, Harry encountered the thick

fog of the Newfoundland Banks. Fortunately they had no difficulty in climbing above this, although naturally they lost sight of the sea, a circumstance which was, if anything, a little disconcerting. Above them the sky was clear. Grieve just managed to get one drift reading before they passed out of sight of the breaking waves.

For the first four hours after leaving St. Johns the clouds and fog above which they passed were level-topped like a sea and gave a perfect horizon for the celestial observations on which Grieve's navigation depended.

The following account of the process of navigating the machine was given to *The Daily Mail* before the start by Grieve :

"Navigation of aircraft across the Atlantic must necessarily be of the rough and ready type, but as it is of vital necessity to ensure success every means must be taken of finding one's position and making most use of the air currents met with.

"Of course the machine might get across by steering a compass course, allowing for the various winds, supplied from the limited knowledge of the meteorologists. But few reports of the surface winds are available, leaving large spaces on the chart of the weather in which conditions can only be guessed, while the upper air currents are absolutely unknown.

"Should the navigator allow for a beam wind of 30 miles an hour when the opposite exists he will be 60 miles out of his reckoning at the end of one hour, and soon altogether out of the weather system he is expecting on the direct route.

"The only method of checking positions and finding the course and speed made good over the sea is by astronomical observations and obtaining the positions by wireless from ships *en route*. In the latter case the ships keep regular narrow lanes and may not be met with, as it would be virtually impossible to keep in their track, and unless one should pass over them and be seen by them their positions would be valueless.

"My intention is to rely chiefly on astronomical positions

which I shall obtain by sextant and work out by a diagram invented by my instructor, Commander Baker. The altitude of the sun, taken about every hour, will give me a line of position at the time of the observation. When the sun is on the prime vertical the line of position will be the longitude ; when on the meridian the latitude. At other times two observations at a good interval, with the run in that time, will give me a position. To obtain this run the 'drift' must be known, and I hope to get this by dropping smoke-bombs by day and light-bombs by night and observing the true path of the machine past them through the 'drift' indicator.

"For night work I have a diagram to facilitate working the sights of six stars, each of which, in combination with the Pole Star, or each with the other, in certain conditions, will give me a good position. The chief difficulty in getting astronomical positions will be to see the necessary horizon. Should it be visible it will be necessary to know the dip of it, which is approximately the square root of the height of the machine obtained by the altimeter, an instrument in the cockpit indicating the height in feet above the sea-level.

"If I am above the clouds I must judge the height above them and use them for my horizon, which will give useful, if only approximate, results. As a matter of fact, the whole navigation must be considered as an approximation, but as Ireland is large and there are no dangers in the air to keep clear of, I do not anticipate any serious difficulty in making a land fall, given good conditions."

As regards the weather during the flight, it was not at all as they expected. They anticipated a north-easterly wind for a short way out, backing to the north-west, with a small depression, on the south side of which they expected to pass and thereby get into favourable winds, first westerly and then south-westerly, as they approached Ireland. In actual fact they encountered northerly winds.

At about 7 o'clock Greenwich time, about an hour after the start, the sea was visible through a hole in the fog for just a few seconds. They were then at 4,000 feet and climbing. Grieve, by observing the breaking waves through the drift indicator, was able to calculate the drift of the machine as 10 degrees to the right of their course, precisely the same as when he made his previous calculations just before they passed above the fog.

Until 10.15 p.m. Greenwich time they steered a true east course, not magnetic east. Meanwhile Grieve took sights every half hour, and at 10.15 he estimated that they were 400 miles from St. Johns and had maintained an average speed of 91 miles per hour. They reckoned to be then in the track of the steamships, to keep to which the course was altered to North 73 East true.

The visibility became very bad. In front and to the right and left, above and below, were heavy cloud-banks which formed dark, ominous gorges, or chasms, through which they flew, feeling very, very small and insignificant in comparison with such giants of Nature. That the prospects were not bright was soon proved when they drove into a heavy storm with rainsqualls. A strong northerly gale drove them steadily out of their course and the dense masses of cloud impeded accurate navigation.

It was a lucky stroke of fortune that the engine and all other vital components of the machine survived this bad weather during this early stage as they advanced into night skies.

After flying for five and a half hours, Harry noticed that the temperature of the cooling water in the radiator began to rise. The effect of this, while not appreciable at the moment, was likely to be complex unless the cause, some defect in the circulation, could be remedied. It was, of course, impossible for either Harry or Grieve actually to inspect the likely source of the trouble, and any effort to eliminate it had to be made, if at all possible, by manœuvring the machine.

It was about 11 p.m. Greenwich time (i.e., midnight, summer time) when the defect became apparent. Grieve was busy taking sights while Harry was piloting and watching. The clouds

were now exceptionally thick, and Harry recalled that he had only once seen the sea since he was ten minutes' distant from St. Johns. And he had now been flying for just on six hours.

The moon had not yet risen and it was well-nigh impossible to discern anything. Flying at 10,000 feet, Harry could just make out innumerable clouds, many of them terrible, ominous-looking peaks extending upwards to about 15,000 feet. Having to go round the clouds, it was difficult to steer a good course, and he could not really afford to waste time and petrol in making any deviations from a truly straight course. Furthermore, he and Grieve, side-by-side, were feeling not too comfortable bodily. The cane ring forming the neck of Harry's suit, which kept his neck free, was jumping about. Grieve frequently had to replace it, and his fingers became frost-bitten, as it could not be done with gloves on. Otherwise they did not suffer from cold, although it was freezing hard. As they forged ahead the temperature of the water in the radiator rose from 168 degrees F. to 176 degrees F. in the space of a few minutes. At the latter temperature it stayed practically constant for a couple of hours or more.

It was at 1.30 a.m. that they realised the great extent of their drift owing to the strong north wind. Taking sights regularly had become impossible owing to the clouds having broken up and ceased to provide a level horizon. Grieve managed to get a Pole Star down to a flat piece of cloud, and discovered with no little surprise that they were about 150 miles south of their intended course. Harry therefore turned more northward to counteract this drift. Nevertheless, half an hour later they were still drifting southward and not making their course, and so, realising that the strength of the gale must be terrific, they had to force the machine still more northward up to latitude 50 degrees and into the track of the ships.

Harry was somewhat concerned when Grieve told him that their drift was equivalent to a side wind of 20 miles per hour, but this did not deter him from sticking to the job. The effect of a strong side wind would of course mean having to travel

"crabwise" in order to keep to the course, a proceeding which must lessen their forward speed.

Both pilot and navigator came to the decision that there must be a cause for this abnormally high temperature in the radiator, which persisted, and, if it continued, was likely to jeopardise their chances of success, owing to all the water being ultimately boiled away. Harry, having concluded that some obstruction had got into the water-filter between the radiator and the water-pumps, knew that the only possible means of removing it was by switching off the engine and diving down steeply in the hope that this would clear the refuse in the filter. This he actually did, and the result was for the time being successful.

But after another hour, by which time they were about 800 miles out from St. Johns, the trouble recurred. The weather was still no better and the clouds very high. Repeatedly Harry switched off and dived, but the obstruction would not clear itself now. Every such dive entailed losing several hundred feet in height, and it is not surprising, therefore, that they gave up the diving process. Each time, after climbing, the water began to boil; and so after getting to 12,000 feet they agreed to maintain that altitude for the latter half of the journey. These episodes of the choking radiator had not yet given them to doubt their being successful in making the crossing. They had got above most of the clouds now, and, with the moon coming well up, they could keep a good course. The fact that by closing the throttle a little they were able to nurse the engine and keep the water from boiling, although done at the expense of a little speed, ensured for them every confidence that all would be well. Thus, with the engine throttled, they cruised along at a constant height of 12,000 feet for about four hours more until they came up against more of those very, very high black clouds significant of unknown, unexplored wastes of the Atlantic vault. They had encountered a depression which had travelled north from the Azores.

So thick were these new clouds that it was almost impossible to get between them. They extended upwards to an altitude of

15,000 feet, 3,000 feet higher than the machine, and the only thing to be done was to get above them.

Once, twice, thrice did Harry try to get above those clouds ; and as many times steam belched forth ominously from the radiator and was turned to ice. The radiator trouble having thus prevented a very necessary and desirable manœuvre that would otherwise have been possible, Harry could only go down into the abyss and find the bottom of the enveloping clouds. Incidentally, the glide gave the water system an opportunity to cool down.

Having glided down to about 6,000 feet, they entered an even darker region than that from which they had just descended, due, of course, to the presence of more clouds above them cutting off the light.

Climbing being out of the question, down they went to 1,000 feet only above the water before they could see to fly. While they dived through the clouds their engine was stopped, and when Harry opened up the throttle it refused to restart. Only when they were within a few feet of the water did it pick up by a lucky chance after Harry had given up hope of its recovery. In fact Harry had hit Grieve on the head to warn him to desist from pumping-up, which might result in his suffering a broken arm when they struck the water. At that moment the engine started. It was a very narrow escape. There they were greeted by those delightful signs of the sun just getting up, one of the real joys of Nature which has delighted the eyes of most flying-men. Again they set their course, but that water would not be kept from boiling. It was then that they agreed to "play for safety," as Harry himself expressed it.

At 5 a.m. two stars enabled Grieve to determine their position as being directly on their course and about 950 miles from St. Johns, representing an average speed of about 85 miles per hour. No more sights were possible, owing to the clouds and the approach of daylight. When they came down low to look for ships about 6 a.m. their position was estimated by Grieve as 50 degrees north,

29 degrees 30 minutes west ; and they pursued a more northerly course to get well on to the steamship route.

The hour of dawn was the one hour in twenty-four in which flying always seemed to hold the greatest charm for Harry, as indeed I believe it always has done for most aviators ; and on this occasion, after having flown through a black night *above* one desolate waste whose secrets may never be unfolded and *ahead* into another which had never before been explored by man, as one can well appreciate, Harry was overjoyed on beholding the first signs of the dawn of May 19th, 1919. That he and Grieve almost immediately began to have an eye for the refuge of a ship only goes to prove the serious nature of the radiator trouble. But for those high clouds which, coupled with the doubtful cooling system, had forced them to yield most of their advantageous height, they might have been able to continue on further than they did at a moderate cruising speed with the engine throttled. But although they covered almost two-thirds of the journey, the chance of their being able to complete it under any circumstances had become practically negligible owing to the loss of water due to several hours of overheating.

Mentally both Harry and Grieve were comfortable, but an attack of seasickness upset Harry a bit. While flying a couple of miles above the dark ocean they did not attempt to probe in their minds the secrets of regions four, five, perhaps six miles below them. Even had they done so, such thoughts could scarcely have had a demoralising effect on souls like theirs. The fallibility of a machine, against which no man can have absolute insurance, was all that robbed them of the joy of completing their intention. Theirs was a successful failure, and beyond perhaps additional monetary reward (which to Harry was never an unimportant consideration), had they had the good fortune to make the direct flight, I do not believe they would have commanded one iota more respect than they did when they returned to the world at large, as from the dead.

They decided to fly diagonally south-east and then south-west

across their course to see if they could find a ship, knowing that they would be unable to go on indefinitely boiling away the water. For two and a half hours they carried out these tactics, in sight of the very rough ocean and with their machine pitched and rolled about by a tempestuous north-east wind described by Harry as "half a gale." There were heavy rainsqualls, between which were clear spaces in which Harry endeavoured to keep. But these spaces became smaller and finally visibility had almost gone. At last Harry's eyes were gladdened by the sight of a ship close to them on the left. Both the ship and the aeroplane were more or less in the fog, with low clouds above, and Harry and Grieve were almost over the ship before they saw her. At a height of 400 feet they flew alongside, firing three Vèrey lights as signals of distress.

While flying so low down between the rough sea and low clouds the *Atlantic* was bumped about very badly. As Grieve said, "It was like being in a small motor-boat in a heavy sea."

It was at about 6 o'clock on the Monday morning that the second mate and the helmsman of the *Mary* sighted the aeroplane. The sea was rough and a stiff breeze was blowing, and the conditions for launching a boat were getting worse instead of better. So much so, in fact, that Captain Duhn did not think he could have saved them an hour later.

Harry was very cheered when he first saw the *Mary*, for he had been looking about for a ship for over two hours and had been violently seasick the while. Grieve also was thankful and relieved when he saw the ship.

The machine floated well. The engines held the air, as well as the spaces in the petrol tanks and the wings.

They flew to and fro above the ship several times until they saw men on deck, after which they went ahead about two miles and made a very good "landing," although a heavy sea was running, with waves about 12 feet high which swept over the wings intermittently. Apart from waves breaking over it, the machine floated well on an even keel and was generally well out of the water. As they saw the steamer approaching they released their

lifeboat in case the aeroplane should break up and sink, as it showed signs of doing. Their life-saving suits kept them more or less dry while the crew of the *Mary* were putting out their boat, which operation took fully an hour and a half. The vessel was only about two hundred yards from the aeroplane.

After they touched the water, Harry and Grieve found themselves standing in the cockpit, up to their knees in water.

Waves were "sloshing" under the upper planes of the machine, the nose of which was heading into the wind. Sometimes waves dashed right over the top planes. Harry was indeed amused by the sight of the first big wave striking the under-surface of the top plane, which until then had been dry and shining. It lifted them right out of the water, and the trailing edge of the top plane broke away completely. The sun was hazy, and low driving clouds were prevalent. Having launched their own little boat in case they should need it in the event of the *Atlantic* going under, they spent the interim until their rescue in discussing as to the possibility of the *Mary* having appliances whereby they could save the aeroplane.

After much difficulty the boat succeeded in reaching them, and they were taken aboard and the boat was drawn to the *Mary* by a line. It was impossible for them to save anything from the aeroplane, and they arrived on board the *Mary*, which rolled heavily, without boots or caps, and Grieve without a coat. They were exceedingly sorry to have to leave valuable instruments and mail on board the *Atlantic*.

As the ship's boat came up to them it banged heavily into the aeroplane and they hopped aboard at once. The *Mary* slung out a rope with which they were hauled to her. Grieve, being a naval man, was spokesman when they first got on board. He went on the bridge and asked Captain Duhn if he could save the machine. Captain Duhn regretted he could not, and remarked on their narrow escape. Grieve's log was washed from his pocket while they were in the water, with the exception of one page of rough notes. The *Mary* was on a course from the Gulf of Mexico

to Pentland Firth, and was crossing the main steamship route, which is only a few miles broad.

The total distance over which they had flown without a stop was approximately 1,050 miles at an average speed of about 80 miles per hour, approximately the distance which Harry covered in stages at a much lower speed in the Round Britain Seaplane Circuit in 1913.

Altogether, before being picked up, they had been 14½ hours out from Newfoundland, it being 8.30 a.m. on Monday, Greenwich time (9.30 summer time), when they boarded the *Mary*. There they met Captain Duhn, whose English was good. He told them he had feared they would sink before his boat could pick them up. As they went on the bridge with him, he said, "Another hour and you would have gone down." He thought Harry and Grieve were Americans, and seemed very nonchalant. As Harry said, "We were struck by the casual manner in which he took the whole business, as if it were an everyday affair to take airmen out of the Atlantic." Naturally the first enquiries, Harry and Grieve made were as to their bearings and the likelihood of their meeting a ship that day or the next and being in the main route of shipping. The *Mary* carried no wireless and they were anxious to let friends know of their safety. When they went on board, Captain Duhn considered there were good prospects of seeing a ship with wireless at any moment. But as the day wore on the storm increased in violence and they had to heave to, only making about a knot in a northerly direction. This course took them away from the shipping route and lessened their chances of being able to communicate.

Neither Harry nor Grieve were the slightest bit excited either at the start or when rescued. As Harry put it: "When we started we felt it was a 'cert'—100 to 1 on." And Grieve, "We had been waiting so long, we felt callous about the whole thing." They were pretty well "done up" when they got on board, and feeling seasick, in preference to taking food they had a good sleep. Grieve woke up first and went on the bridge.

Grieve's seat was not absolutely side by side with Harry's, but was just a little behind, Harry's left shoulder being in front of his navigator. Grieve was thereby able to move about to the extent of kneeling down to look at the drift indicator, to stand up to take observations, or to move forward a little for working the wireless. This probably accounted to some extent for Harry being in need of sleep, since he had not had such freedom to move about.

Captain Duhn thought they were Americans—in fact Harry jokingly remarked that he rather thought Captain Duhn was a little disappointed that they were not. Harry told the Captain he would like the opportunity of making another attempt, and he pointed out the advantage the Americans had over him in the shorter oversea distances and the assistance of the American warships, although he personally would not have appreciated such assistance, which detracted from the value of the performance. When they had rested and made themselves "at home," Harry and Grieve passed away much of their time on board reading English books which Captain Duhn had.

On Sunday morning, May 25th, almost one week after starting, they sighted St. Kilda and later on the Butt of Lewis, when communication with the mainland became possible. It was a beautiful morning, with the sea as smooth as ever off this exposed coast. Shortly after 10 o'clock, heading for the Butt of Lewis, Captain Duhn, after running up signal flags reading "*Mary*," began sounding the syren. With the weather so fine as it was, this could not but attract the attention of the coastguards. As the vessel drew nearer the shore, Captain Duhn, acting on Harry's instructions, ran up the signal, "*Communicate by Wire*," which had the desired effect of intimating to the coastguards, Chief officer William Ingham and Leading Seaman George Harding, that an important message would follow which they must transmit to headquarters by telegraph. The next signal run up was the international signal for "*Saved Hands*," and this was then replaced by the symbol indicating that the following signals

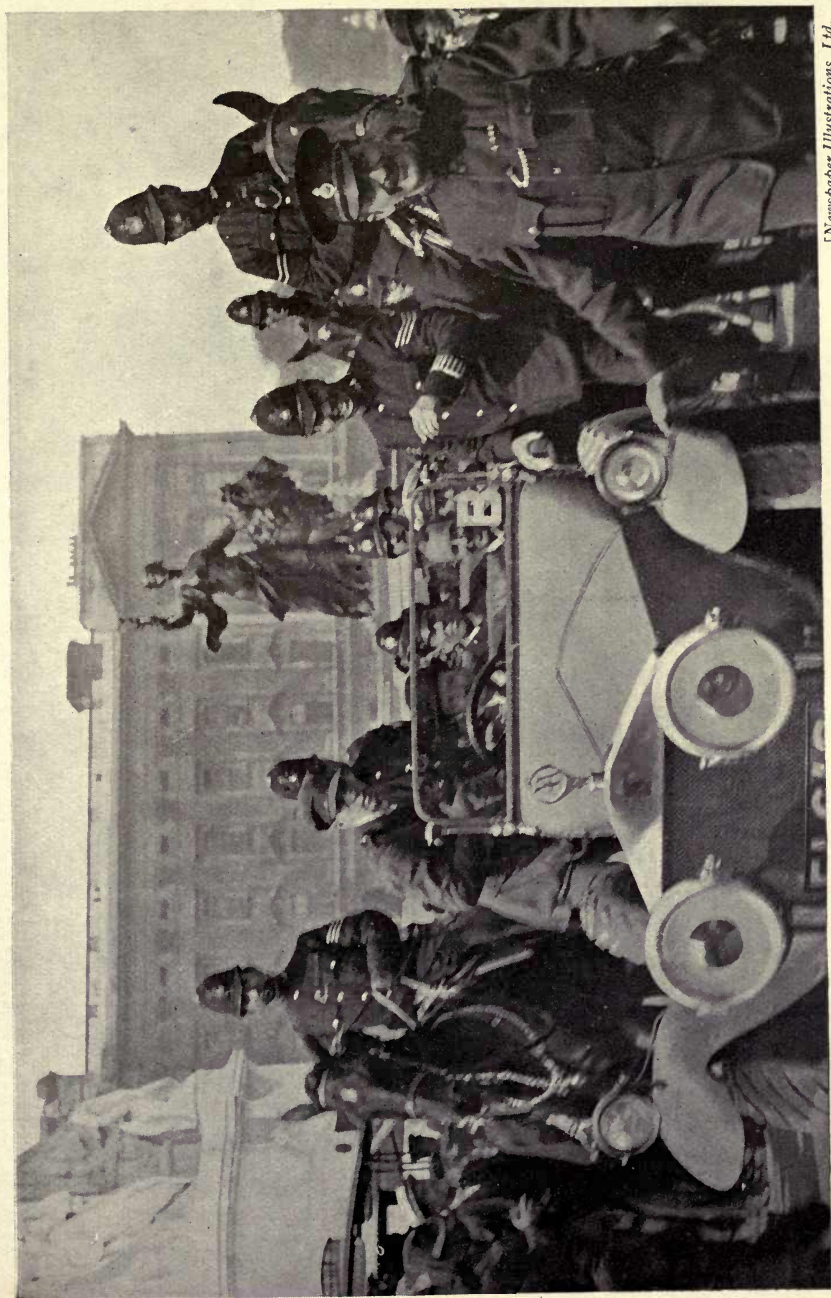


Photo by]

[Newspaper Illustrations, Ltd.

HARRY AND GRIEVE LEAVING BUCKINGHAM PALACE AFTER HAVING BEEN DECORATED BY THE KING.
ALTHOUGH A CIVILIAN, HARRY RECEIVED THE FIRST AIR FORCE CROSS—A SERVICE DECORATION.

[Facing p. 244.

would be spelt. Up went the flags "*S.O.P.*," followed by "*A.E.R.*" and after another interval by "*O.P.L.*," and finally "*A.N.E.*" It was when they received the last syllable that the coast-guardsmen were thrilled with the knowledge that they had good news of men whom the world had given up as lost. Having delivered this message, Captain Duhn put out to sea, again, and was just going beyond signalling range when he saw on shore the flags asking "*Is it.*" Returning towards the shore, he read, "*H-A-W-K-E-R.*" Up went his reply, "*Yes.*" The form of signal was made out by Grieve, who was conversant with the code.

Off Loch Erribel the *Mary* was met by the British destroyer *Woolston*, sent out from Scapa Flow by Admiral Fremantle to take them aboard. Harry and Grieve therefore bade farewell to Captain Duhn and thanked him for the great kindness they had received at his hands. Captain Duhn described Harry and Grieve as a couple of unusually amiable and pleasant fellows in whose company it was a pleasure to be.

Harry and Grieve did not converse a great deal during the flight, although the noise from the engine was comparatively quiet, most of it being carried away behind them through a long exhaust-pipe. Their conversation was mostly carried on by signs. Grieve would hold up the vacuum flask when he wanted to know if Harry required a drink. They had an inter-communicating telephone, which they rarely used. As Grieve put it, they were too busy to talk much.

Sometimes they communicated by writing. One of Grieve's messages read, "We didn't have much to spare taking-off," referring, of course, to their only just clearing the boundary of the starting-ground at Mount Pearl. He wrote all the compass bearings during the flight and held them up for Harry to read. Grieve used the clouds for his horizon simply because they saw more clouds than sea. In fact, with one exception it was nothing but clouds until they were forced down almost to the water during the last two or three hours. But the weather did not hinder them,

and Harry was convinced that but for the radiator trouble he would have won through.

Speaking after the flight of their means of communication with ships, Grieve said that the first wireless fitted was tried during their test flight at St. Johns, when the exciter of the generator burnt out owing to the too great speed of the small windmill or air-driven "propeller." They therefore had to discard this set, which they replaced at once by a small "Boy Scout" plain aerial set, designed to give a radius of about 25 miles. Their long wait at St. Johns gave them time to receive from England a new set slightly different from the original one, and more powerful than the "Boy Scout" set, for it had a range of 250 miles. They were unable to give this a preliminary test in the air, however, because they preferred not to risk any more test flights on such a small aerodrome as they had. When they got in the air they found the spark to be very feeble, and only a small ampèrage could be raised, owing to the windmill or "propeller" in this case being too small. Nevertheless, they felt they had enough power in their transmitter to communicate with any ships within moderate range, and they tapped out messages every half hour, with the object of letting the outside world know that they were still in the air. But no acknowledgment of these messages was ever received during or after the flight. When the engine was throttled down, during the last few hours to keep the temperature of the water as low as possible under the adverse circumstances in which it was circulating, the speed of the machine was not enough to drive the wireless windmill.

Nevertheless, the S.O.S. call was tapped out at intervals of 15 minutes in case the spark should happen to operate. Fortunately Grieve never intended to rely on the wireless for navigating purposes other than to check positions occasionally by communicating with any ships which they might pass above. Previously to the flight, ships were asked by wireless from St. Johns to make known their position in the event of their seeing an aeroplane by day or a red Vêrey light at night. Harry and Grieve

saw no vessel other than the *Mary*, and therefore fired no lights until then. Ships that reported having seen red lights in the sky before then probably saw the red glow from the exhaust-pipe of the machine as she passed in the night in and out between the clouds.

Exactly half the petrol carried, 170 gallons, was used, an equal amount remaining in the tanks when the machine took the water.

One of the conclusions arrived at by Grieve was that future navigation in the air undoubtedly lies with directional wireless, once that is perfected.

They spent Sunday night, a week after their romantic departure from St. Johns, on Admiral Fremantle's flagship, H.M.S. *Revenge*, and on Monday morning, having received an Admiralty pass to London, they transferred to the destroyer F.O.8, which took them from Scapa Flow to Thurso in about 45 minutes. It being low tide, it was impossible for the destroyer to go into harbour, and so Harry and Grieve were rowed ashore by half-a-dozen bluejackets, once again to set foot on home soil at Scrabster Pier, whence the late Lord Kitchener had departed on his ill-fated voyage in the *Hampshire*. The sun shone gloriously, and away in the distance could be discerned the blue outline of the Orkneys.

As they reached the landing-stage cheer upon cheer rolled forth from those who had assembled to meet them. Provost and Mrs. MacKay, with members of the Thurso Town Council, several naval officers and men, and townsfolk, had motored out to Scrabster, where everybody and everything was *en fête*. Provost MacKay was the first to greet Harry and Grieve. Addressing them, he said :

"Mr. Hawker, in the name of the people of Thurso I offer you and Commander Mackenzie-Grieve a welcome, not only to Thurso, but to the shores of Britain. Throughout the length and breadth of the land, and of every land, to-day the news of your safe deliverance is ringing, and hearts everywhere are rejoicing. It is true that you have not achieved what you so

gallantly set out for, but to-day you need not worry over that, because you have indeed achieved great things. The names of Hawker and Grieve will live for ever in the annals of Atlantic flight. You have brought a new lustre to the daring, the endurance, and the intrepid spirit of our race. Your countrymen greet you warmly and proudly as heroic pioneers and sportsmen. From the moment of your departure from St. Johns the world has been on tension for news of you; expectation gave way to anxiety, and then anxiety to gloom, but happily all fears and forebodings are to-day dispelled. The world-wide joy over your pluck and safety is so great because the sense of relief is so great. It was at this landing-stage that Lord Kitchener said farewell to the land he loved, and now we shall also know it and mark it as the place of wonderful welcome to two brave sons of Empire."

Harry, on behalf of Grieve and himself, expressed his heartfelt thanks for this warm greeting, with the modesty and brevity which were so characteristic of him on such occasions. Provost MacKay then introduced the members of the Town Council and other Thursonians, after which Mrs. MacKay invited them to her house for luncheon, an invitation which they were happy to accept.

In the Provost's car they drove through the beflagged streets, where many people, including parties of bluejackets, had foregathered. At North Bank House they enjoyed a quiet luncheon with Provost and Mrs. MacKay, Sir Archibald and Lady Sinclair, of Ulbster, and the senior naval officer, Lieut. Weir, and his wife. They were feeling very fit and their complexions were sunburnt. Briefly Harry recounted their experiences, telling of the cloud-banks, the clogged radiator pipe, the descent nearly to the water, the rough seas and tempestuous winds, and the sighting of the *Mary* and their gallant rescue.

Harry and Grieve were much amused by some of the newspapers which Provost MacKay showed them, containing their obituary notices. Grieve was particularly touched by a photograph

purporting to be that of his wife, for he was not married ! Before driving to the station Harry and Grieve spoke of the warmth of the hospitality they had received, not only at Thurso, but also at Scapa on the previous evening with the Grand Fleet.

During the luncheon, crowds assembled outside Provost MacKay's residence, and at the station Thurso had never before seen such a throng. Cheers were ringing on all sides, handshakes, cameras, and autograph books were the order of the day. Thurso was *en fête* as never before.

CHAPTER XVII

MY OWN REMINISCENCES OF THE ATLANTIC FLIGHT

I Wait for News—The Americans Start—I Hear Harry has Started—And I Put Out the Flags—No News Next Morning—Fate is Unkind and Brings a False Report—Which, Contradicted, Delivers a Paralyzing Blow—No Further News—"All Hope Abandoned"—Good News—Peace of Mind Once More—Everybody Happy—The King Telegraphs Congratulations—I Go to Meet Harry at Grantham—Harry's Triumphal Progress to Grantham—Together Once More—Harry Rides a Horse Through London—"Escape" from the R.Ae.C.—Celebrations at Ham—Fireworks at Hook.

CHAPTER XVII

AFTER the first week of Harry's absence the time passed fairly quickly. I never left home for longer than two hours, and then I bought newspapers in case Harry had started. Often I would have news about seven in the evening to the effect that Harry was about to start. I sat up until the news was contradicted. Never before had I taken such an interest in the moon as during these few weeks. I knew every phase, and when it reached the full I felt sure that Harry would be starting.

I was in town when I saw a placard saying that the Americans had started, and I at once rushed to the nearest telephone box to find out if any message had come through from Harry, as I knew he would not let the Americans arrive first without a struggle ; but the moon was waning and the weather reports none too good.

On the night of May 18th I received a message to the effect that Harry had left at 6.30. The first thing to do was to put out all the flags, for he would be home on the morrow. But this did not take long, and, when done, the time seemed to drag.

As the hours went by and darkness came on, the time passed even more slowly for me. I remember I went to the window and stood there waiting for the moon to rise ; it was waning, but, despite that, seemed to make the night less terrible. It was very cold, and I wondered whether it was all worth while. I had written down each hour that Harry was to be in the air, and hour by hour crossed them off.

When the papers arrived on the morrow they were full of the start of the Atlantic flight, but gave no news beyond the precise time of the start, as no wireless had been received. No message came for me until about ten o'clock that night, after I had been

down to Brooklands expecting his arrival. The message, which was from the Admiralty, told me that Harry had landed in the sea forty miles off the mouth of the Shannon, and until two or three o'clock in the morning the telephone unceasingly rang, bringing congratulations from far and near. My brother, who had obtained special leave, remained up all night and made himself comfortable by the telephone. The beginning of the night found him receiving messages and returning thanks with energy, but by one o'clock his tones lacked their initial gusto, and by two o'clock they were hardly lucid. I went to bed thoroughly happy and at peace, but I was too excited to sleep.

I was the first one down in the morning to get the papers. I opened the *Daily Mail* first of all, and the headlines I saw nearly blinded me. I have since had to read worse news than I read that morning, but I do not think I have ever felt so frantic and yet so completely hopeless as when I saw the fatal words, "Hawker Missing—False Report of Fall in the Sea."

I believe at that moment I gave up all hope. Then I thought of almost his last words to me before he left: "If things don't go quite right, never give up hope"; and as there seemed to be two sides to the question whether he was alive or not, and no definite proof of either, I decided, no matter what happened, to cling firmly to the belief that he was alive.

Mrs. Sopwith, who came to see me about ten o'clock, helped me to keep my resolution during the whole of the ensuing week. My brother obtained leave to stay with me; and then it was a case of waiting. Day after day passed with no news. Each morning, after reading the papers, I went off to the Admiralty for any further news; and every day I saw the papers getting less and less hopeful. Everyone seemed to put a time limit on his, or her, hope. One said, "I will give them three days," while one more optimistic said, "A week." When I had waited a week I could almost feel that Harry was near, and on Saturday I was perfectly sure that I had only one more day to wait.

On the 24th I received the following telegram:

My Own Reminiscences of the Atlantic Flight 255

"The King, fearing the worst must now be realised regarding the fate of your husband, wishes to express his deep sympathy and that of the Queen in your sudden and tragic sorrow. His Majesty feels that the nation lost one of its most able and daring pilots to sacrifice his life for the fame and honour of British flying.

"STAMFORDHAM."

But neither this nor Lord Northcliffe's generous offer to make provision for myself and Pamela changed my conviction that Harry would turn up safe and sound.

On the Sunday morning I read in the papers that "all hope had now been given up for the safety of the Atlantic airmen," and I recall thinking how silly "all hope" sounded, when they could not know everyone's hopes. I went to the little church opposite, where prayers were offered for the safety of Harry and Commander Grieve. I remember hurrying home because I thought the good news had come; but it had not.

About an hour later I was told that the *Daily Mirror* wanted me on the 'phone with a message that could not be entrusted to anyone but myself. They simply told me that Harry and Grieve had been picked up by a Danish ship without wireless and had just signalled their message with flags to the Butt of Lewis; and could they, as the first to convey the news to me, send a representative down for a private interview at once. What I answered I do not know—probably nothing—but I felt that anyone could do what they liked then; I should be happy.

My brother and I rushed round to spread the good news. We went first to the Sigrist's bungalow on the Thames Ditton island, where I had spent the previous day. They had already heard the news, and Fred Sigrist rushed down the steps of his house saying, "What can I do for you?" I replied, "Oh, jump in!" He at once took a header, fully clothed, and swam up and down, shouting incoherent messages to all and sundry on the island. By this time a lot of people had collected, and we drank everyone's health at Fred's expense. Then we went home,

with everyone following us. When we arrived at Hook a terrible vision of a dozen or more reporters met our eyes. The *Daily Mirror* man wanted his interview as promised, and the others wanted to listen, which did not suit him. Anyway, we all shook hands, there was no "interview," and plenty was said next morning in the papers.

By this time there was a large gathering of people, and although I believe each of them had a cup of tea or a glass of something better, there was little food in the house for such a crowd. I then went to the special Thanksgiving Service which Mr. Wood, the curate-in-charge, had arranged at Hook Church. It was a most beautiful service, and I was much impressed by its simplicity and the feeling in the hearts of the congregation.

On arriving home again I found a dinner had been arranged at the Piccadilly Hotel, and we were to start, about thirty strong, just as we were, the men-folk in boating flannels and the ladies in light summer frocks. Perhaps we exceeded the speed limit, or the inspector who operated a trap on Putney Hill thought we did, and we had to stop. My brother and I were leading in the Sun-beam. When the police recognised us (an enormous Australian flag attached to our radiator cap must have given them some idea), they waved us on without complaining; and as we passed, one of them said to me, "I'd feel like a bit of a blind myself if I were in your shoes."

We were a very jolly party, and it only needed Harry's presence to make it complete. When we arrived at the hotel the orchestra there played "For He's a Jolly Good Fellow," and everyone was very gracious. We dined, and, after visiting a few friends in London, returned home.

After news of Harry's safety was confirmed, I received the following message from the King, by telegram:

"The King rejoices with you and the nation on the happy rescue of your gallant husband. He trusts that he may be long spared to you."

From Queen Alexandra I received this telegram :

"With all my heart I wish you and the nation joy on the safety of your gallant husband and his companion. I rejoice that a Danish ship rescued his precious life.

"ALEXANDRA."

The next day I had appointed to go and see an Atlantic flight film at the Majestic Cinema, Clapham. We arrived at the hour fixed, and I thought there was a fire somewhere, as all the traffic was held up and there were simply mobs of people. I could not believe that they had all come to see us, but it seemed they had, and I am afraid they must have been very disappointed. Someone gave me a beautiful bouquet, but before I had gathered myself together it was taken away and then presented to me again by the same charming lady. It appeared that the hitch was caused by the cinema operator opposite falling off his cab just at the critical moment when the bouquet was being presented, so it had to be done all over again. I never saw the film version of this incident, but it must have been funny.

From a flag-bedecked box we saw the film of the Atlantic flight. Mr. Derwent Hall Caine said some very nice things about Harry, and added a few about me for the sake of politeness.

The next morning I stayed in bed and amused myself opening the more interesting of the correspondence. I received about 2,000 letters before Harry came home—that was in two days—and I am afraid many did not get opened for weeks.

Mr. and Mrs. Sopwith and myself left for Grantham just before lunch, and arrived with nearly an hour to wait for the train which was speeding Harry down from Scotland. The station was closed to the public and only R.A.F. cadets were allowed on the opposite platform. The station-master was most charming, and had arranged for Harry to meet me in his own little room on the platform.

While on board H.M.S. *Revenge*, Harry sent the following message, *via* Aberdeen, at 10.35 p.m. on Sunday, May 25th :

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"My machine stopped] owing to the water-filter in the feed-pipe from the radiator to the water-cock being blocked up with refuse, such as solder and the like, shaking loose in the radiator. It was no fault of the motor [Rolls-Royce]. The motor ran absolutely perfectly from start to finish, even when all the water had boiled away. I had no trouble in landing in the sea. We were picked up by the tramp ship *Mary*, after being in the water $1\frac{1}{2}$ hours. We are going to London from Thurso at 2 p.m. on Monday, arriving in London between 7 and 8 p.m. on Tuesday."

The above message constituted the first public account as to the cause of the failure.

To Harry, on the *Revenge*, Provost MacKay, of Thurso, sent the following message :

"The people of Thurso heartily rejoice over your and Mackenzie-Grieve's safety, which is surely as wonderful as your pluck. May I have the pleasure of meeting you and any others at Scrabster (Port of Thurso) to-morrow and providing luncheon before the departure of the afternoon train or of assisting you in any way?"

The progress of Harry and Grieve to London was nothing short of triumphal and an experience in itself, apart from the actual flight accomplished. After leaving Thurso, at Bonar Bridge station they met with a rousing reception. The people there had turned out *en masse*, and two pipers, McBain and MacDonald, played soul-stirring strains while the crowd cheered and cheered again. As the train stopped, the folks swarmed round the carriage door and Harry and Grieve shook hands with as many as possible. There were several telegrams awaiting them at this remote little station, an augury of what they might expect nearer home. They took in a tea-basket here.

At Tain the excitement took a similar form. Here a council

meeting was specially adjourned, and the councillors proceeded to the station to meet the train. Provost Maitland delivered a brief congratulatory message. Harry's radiant smile thoroughly captivated the people, who cheered to the echo as the train passed out.

Similar expressions of the public joy occurred at every station between Thurso and Inverness. At Brora most of the population, including the school-children, were on the platform, and loud cheers greeted the arrival and departure. At Invergordon the crowds on both sides of the train were particularly large, and unbounded enthusiasm prevailed. At Alness they were acclaimed by pipers, amid cheers. At Dingwall and Beauly similar warm-hearted acclamations were offered.

At several places *en route* ladies offered bouquets, and by the time the train reached Inverness Harry's compartment was rich in the perfume of the lily of the valley.

There were many incidents of human interest on the journey. At one point far up North Harry noticed a woman and her two kiddies waving at the train from the door of a crofter's cottage on the hillside. He and Grieve both responded by waving their handkerchiefs until they were out of sight. At some of the stations children came shyly forward to shake hands and say, "Good luck." Some were more bold, and said, "You will do it yet." Harry was completely won by the warmth of the Highland welcome, and remarked later, "What fine people!"

As the train came over the bridge into Inverness, the siren of a vessel in harbour heralded their arrival. The station and the vicinity were occupied by enormous crowds, and it was with the utmost difficulty that Harry and Grieve were able to get, or rather be got, to the Station Hotel. Speaking from the main staircase of the hotel, Provost Macdonald, on behalf of the people of Inverness, said :

"We congratulate you very heartily on your brave attempt to cross the Atlantic and more particularly on the marvellous

escape you have had. In 1913, when you, Mr. Hawker, passed Inverness, you did not give us much of a chance of welcoming you, but we now have the chance, and give you a real Highland welcome. We are delighted to see you, and to congratulate you on your wonderful attempt to cross the Atlantic. We are glad to know that you live to fly another day, and I hope that before long you will win that great prize offered by the *Daily Mail*. The proprietors of that newspaper have done a generous and patriotic action in stimulating aviation—one that deserves the congratulations of the whole country. We are all delighted to have you and Commander Grieve with us. I hope that after you have had a needed rest you will have another try at the Transatlantic flight, and, if you do, you will have the best wishes of the people of Inverness that your second attempt will be successful. I call for three cheers for Mr. Hawker and Commander Grieve, and three more for Mrs. Hawker, who has never lost faith in her husband's safety."

When the cheers had subsided, Harry said :

"I can assure you I feel very embarrassed under the present conditions. I cannot help feeling in a sort of way that I am here under false pretences in so far as I am not so good as people think I am. The risk I ran was not so great as people think it was. It was a perfectly straightforward thing, and not at all an attempt of the do-or-die order." (Amid cheers, somebody shouted, "You're too modest !") "Under ordinary conditions, there are hundreds of ships in the Atlantic without wireless, and one might be picked up and be there for a fortnight without anybody knowing about it. There was practically no risk at all. I thank you very much indeed for your warm welcome and your good wishes."

Grieve was also called on for a "speech," and said :

"I can only echo Mr. Hawker's words. I deeply appreciate your great and enthusiastic welcome, as I am a Scotsman myself."

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They were both called on to make a brief speech from the balcony of the hotel as well. After supping with Provost Macdonald, they entrained for Edinburgh and London.

In the small hours of the night, even at tiny stations, there were little groups of people eager to catch a glimpse of the train as it passed through, and long after Harry and Grieve were enjoying a sleep they were passing stations where the train halted to the accompaniment of bagpipes.

Perth was reached at 5 a.m., when one would have thought everybody there would be fast asleep. But this was not so. The people were there in thousands to cheer and watch the heroes of the hour for a few moments. A bouquet was presented and, in acknowledging it, Harry mentioned that he had had an excellent sleep from Inverness and was feeling very fit.

As for the reception at Edinburgh, I cannot do better than reproduce the account given by the *Evening News* (London):

“ . . . At Edinburgh, which has grown accustomed to the visits of the great, there were the same scenes. The station platform was crowded by 8 o'clock, and there was a strong force of police on duty to keep the way clear for passengers. When the train steamed in there was a great murmur of excitement and craning of necks. Hawker was at once surrounded by all kinds of official and unofficial admirers. It was really marvellous, the number of solemn officials who found it their duty to be very near Hawker as he came down the platform. The cheers grew and grew till the whole station echoed with them. Suddenly there was a rush through the barrier, and before the police realised what was happening Hawker was raised shoulder high and carried, smiling and a bit unstable, through the clamorous crowds. It was an extraordinary scene of fervour and welcome. Then he disappeared into the Station Hotel for breakfast. The same desire to see and acclaim the hero was there, though it was more discreetly veiled, as becomes a great hotel. It was wonderful, the number of people

who had left their newspaper and their handkerchief in the dining-room and in the hall.

"I had a few words with Hawker in the hotel. I found him looking the very picture of health, bright and youthful—as one could hardly believe after his journey into the Atlantic and across Scotland. He told me that already he had given the whole story of the flight. He talked with the greatest enthusiasm of his journey through Scotland. 'You would hardly believe,' he said, 'how kind and appreciative they have been the whole way down. It has absolutely astonished me.' I asked him whether he thought he would ever try the Atlantic again. One might have expected a very emphatic negative to such a suggestion, but all Hawker could say was, 'I don't know.' He said it depended on the Sopwith firm, seeming to suggest that his own personal experiences and tastes were rather unimportant things.

"Commander Grieve does not look quite so fit as Hawker. I thought he looked a bit tired and strained, but the journey from Thurso would do that, even if he had not done before it the biggest feat in navigation the world has known since Columbus. When the train left at 10 o'clock there was a repetition of the scenes of arrival, only with a bigger crowd.

"Every corner of stair and platform and bridge where one could get a glimpse of Hawker and Grieve was crammed to the utmost. There was wild cheering and the police were busy. The two dived quickly into the Pullman as if a bit embarrassed with all this excitement; but, after many requests, appeared at the carriage door to be photographed. In a moment the train was away, and Edinburgh set to talking about the magnificent young heroes, and to-night will read of the acclamations all down the line."

At Newcastle, some hundreds of people were on the platform when the train steamed in, and Harry and Grieve met with a great reception. The Lord Mayor and Sheriff (Mr. Cole), who

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were accompanied by other members of the Corporation, and Mr. Herbert Shaw, representing the Chamber of Commerce, congratulated them on their escape and wished them better luck next time. The Lord Mayor presented each of them with a volume of views of Newcastle and a case of cigarettes as a souvenir of the occasion.

After thanking the Lord Mayor, Harry held a miniature reception by shaking hands with some hundreds of people who passed in front of his carriage door.

In acknowledgement of their great welcome to him, Harry addressed the following message to Scotsmen, through the medium of the Press :

“I am deeply touched by all the marks of respect that have been shown to me, and particularly by the kindness and sympathy displayed towards my wife during a week that must have been a severe trial to her. Only the kindness shown to her could have enabled her to get through that trial.

“As for myself, I am simply overwhelmed by the warmth of the greeting showered on me everywhere since first I touched British soil on Sunday last. I shall remember it to my dying day. It almost makes me feel that it was worth while failing to have such an ovation as has been accorded to us. Certainly I am convinced that the public display of appreciation more than repays me for anything I have gone through, and convinces me that the attempt to cross the Atlantic was well worth while.

“I am not discouraged in the least by what has taken place, and I have not abandoned the idea of crossing the Atlantic. What I shall do is a matter for discussion with my friends and backers, but I am far from being out of the race.

“I have nothing to say about the criticisms of those who think the attempt under the conditions then prevailing was foolhardy, save to say that I do not regret anything I have done, and that under similar circumstances I should act in the same way. The attempt was well worth making, and it

had to be made, for there was a danger of the honour of being first across the Atlantic being wrested from the old country. Someone else may succeed where I failed, but I hope that, whoever does succeed, the honour will rest with Britain.

"I may say I have been loyally backed up by my wife ; and when a man embarks on an adventure of this kind the spirit in which it is taken by his wife counts for a great deal. She has been splendid through it all, and what credit there is for what has been achieved is hers as much as mine."

Commander Grieve's message ran :

"I can only say 'ditto' to Harry Hawker. I have been deeply touched indeed by the kindly interest taken in our flight and the disappointment of failure is easily forgotten in the warmth of the welcome given us. It was a fine stunt, well worth attempting, and, like Hawker, I have no regrets. I am more than ever convinced that the Atlantic can be crossed, and I am ready to try again when circumstances permit of the battle being renewed under more favourable conditions. Next time we ought to succeed, but if somebody gets in before us we can only say 'Good luck to you.' Everybody has been splendid in connection with our flight."

At Darlington the welcome was magnificent. Hundreds of people were congregated on the platform, and as the train—15 minutes overdue—steamed in, loud cheers were raised and cries of welcome greeted them. Harry came to the carriage door, and his bronzed face was the signal for renewed hurrahs. The crowd surged round the door to shake Harry by the hand. Smilingly he responded by gripping as many hands as possible. As the train left the station cheers were renewed, rattles sounded, and hooters and whistles were blown.

At York, the Scotch express was twenty minutes behind time, and for over half-an-hour before the scheduled time a crowd had been steadily assembling on the platform. Lord Knaresborough

First Transatlantic Air Post
1919.

V. Alcock



Ans. Brown

J. B. Hawke

H. Mackenzie-Grieve

Northcliffe

Thos. Lipson

Presented by the British Aerialists to the
Permanent Marine Disaster Fund of Newfoundland.

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(Chairman of the North-Eastern Railway) was among those present, and he subsequently travelled on the train to London. The Sheriff of York (Alderman C. W. Shipley) was also present.

When the train ultimately drew up at York station, shortly after three o'clock, a rousing cheer went up. The police found it impossible to restrain the crowds from surging up to the fore part of the train where Harry and Grieve occupied a first-class compartment. They swarmed round the door, crowded on the foot-boards and on the coaches, and cheered themselves hoarse. Aided by the railway police, Mr. T. C. Humphries, the station-master, was able to reach Harry's compartment and hand in some telegrams, including the Royal Command to Buckingham Palace. For some minutes Grieve held the door while Harry was busy with replies to telegrams ; then he, too, appeared. There was a fresh outburst of cheers. Describing the scene, the *Yorkshire Post* said :

" . . . He looked well-bronzed, wonderfully fit, and smiled genially in acknowledgment of a fresh outburst of cheers. For the convenience of a group of photographers, who were poised on a pile of baggage, Mr. Hawker pleasantly raised his head and leaned forward. The cheering was continuous, and both Mr. Hawker and his navigator seemed particularly interested in a portion of the crowd who, failing to see from the platform, had climbed to the roof of a train on an adjoining platform, swarmed over the tender and cab, and along the foot-plate of a locomotive, while the more nimble juniors had clambered to the under-girders and lattice-bracing of the station roof.

" Mr. Hawker did not attempt to make a speech, though encouraged by the crowd to do so. He was also appealed to by autograph hunters, several of whom vainly waved their albums from the densest part of the crowd. Some Australian soldiers, not to be denied, forced their way through the crowd and grasped the hand of their fellow-countryman,

congratulating him with characteristic warmth and vigour. When the train, after ten minutes' stay, was restarted, a perfect forest of hands was thrust towards the carriage, and as his coach slowly passed forward Mr. Hawker grasped such as were within reach. It was a royal reception from a crowd moved to the highest pitch of enthusiasm, and their deafening cheers completely drowned the noise of the escaping steam as the powerful train moved on its southbound journey."

Harry's next stop would be at Grantham, where he expected to meet me.

At last the train came in, and there seemed to be an awful scuttle outside. Then Harry literally fell into the little room where I was waiting. He just said the sweetest and most wonderful thing I could ever hear, and added, just as the people started to crush in, "Don't cry."

Then we went back to the waiting train. Standing in the doorway of the little room, we were faced by a veritable sea of cameras, which I tried to count but could not.

We got into our carriage in comfort—the last comfort of the day—and with an aeroplane as escort overhead, Harry and Grieve triumphantly proceeded to King's Cross, where a terrific reception awaited them. As the train drew up at the platform, part of the enormous crowd surged into our compartment. How they knew which one was hard to tell. The civic reception party who were on the platform to give official welcome to the heroes were completely shattered, and I believe it must have been wonderful tactics which allowed the official Mace-bearer to retain the mace in the face of 300 or so Australian soldiers who thought they needed it. Anyway, the two adventurers were just carried out of the train and placed in Harry's big Sunbeam, which a few hundred Australians, not content with towing, began to carry!

Harry, by then worried as to what would happen to his car, with about forty people up, and carried by hands which caught hold of anything which projected, decided, in consideration of

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the welfare of the car, to leave it, and he began literally to crawl out over the heads of the people. Eventually he was saved through the offer of a ride *in tandem* on a police officer's horse. Later, this officer relinquished the animal for Harry, who arrived at the Royal Aero Club in Clifford Street in triumph and to receive more welcomes. Arrived there, and once inside, Harry and Grieve had to stay. The crowds outside grew bigger and denser instead of the reverse. Mr. Sopwith and others, from the balcony, tried to persuade them to disperse by telling them that further jubilation was not desirable and the aviators wanted rest badly. But these efforts were of no avail, probably because owing to the tumult below the words passed unheard rather than unheeded.

However, a little strategy, a side door, and about ten mounted police who kept close to the car until it had gathered up enough speed to keep people from jumping on, combined to facilitate an escape, and, having parted from Grieve at the Club, we were speeding off for Kingston.

The employees of the Sopwith firm had organised a special entertainment in the grounds of the Ham works, and Harry had promised to be there. But when he arrived all seemed to be in a state of chaos. A singer stopped singing in the middle of a word, and the whole audience rose as one man and seemed to engulf Harry. It must be a very strange and wonderful experience, even although it last but a few days, to be continually the centre of a demonstrative crowd. Crowds waiting to see you leave your house; more crowds waiting at your destination. It can only be the very few who remain unspoiled by such ovations.

After having thoroughly broken up the proceedings at Ham, for which all the artistes who had not yet appeared were probably thankful, our party proceeded to Kingston in the car of honour, towed at a run for about two miles by the Sopwith people. At Kingston an impromptu supper was given to all and sundry by Mr. and Mrs. Sopwith.

At about 11.45 we all left for Hook, as I had promised the people in the village they should get their welcome in some time during the evening. Although it was about midnight when we reached our home, the crowds around were far more than the population of which Hook could boast. Here, as our car turned into the gate, Harry was greeted by a fine set-piece which emblazoned the words, "Welcome Home!"; and this was followed by a long and wonderful display of fireworks, arranged by the men at the Sopwith Works and executed by Messrs. Brock.

More speeches and thanks returned and then to bed, after what must have been a day which few men have experienced; especially as I know all the welcomes and demonstrations were unexpected by Harry, who, having failed to do what he set out to do, had thought of creeping home and getting to work on another machine as quickly and with as little fuss as possible, with a view to making a fresh start.

CHAPTER XVIII

AFTER THE ATLANTIC ATTEMPT

Harry and Grieve Receive a Royal Command—The King and Queen and Prince Albert Hear their Story—The Air Force Cross—Comedy of a Silk Hat—A Cheque for £5,000—Is Nearly Lost—The *Daily Mail* Luncheon—General Seely Delivers Official Congratulations—Harry Replies—And Grieve—Tributes to Lord Northcliffe—Another Luncheon, also at the Savoy, on the Following Day—Royal Aero Club as Host—An Appropriate Menu—The Derelict *Atlantic* is Recovered—Harry is Pleased.

CHAPTER XVIII

THE vigorous expressions of public joy and enthusiasm evinced on Harry's arrival in London on Tuesday evening had by no means abated by the following morning, when Harry and Grieve were to attend at Buckingham Palace in response to a command telegram from the King. The appointed hour was 10.30, and before that time many hundreds were gathered near the gates, around the Victoria Memorial, and in the Mall. A *Times* correspondent's account read :

"Most of the crowd clustered round the main gates to the Palace. They were expecting the visitors to enter that way, and were looking for two young men dressed in the easy garb which had proved singularly appropriate for arrival at King's Cross. Under this delusion they paid no attention to two solemn men who drove up in a Rolls-Royce car about 10.20 through the other gateway and were admitted into the Palace. The solemn man in morning coat and silk hat was Mr. Hawker, and his equally solemn companion in naval uniform was Commander Grieve.

"The error had been realised when the airmen left the Palace about an hour later, and the crowd, now to be numbered in thousands, seemed resolved to make up for lost time. Without his hat, as he first appeared, Mr. Hawker was quickly recognised, and the cheers rang out in a moment. There was a rush to approach nearer the gates, but mounted policemen kept back the crowd. Girls waved their handkerchiefs, men their hats, and all shouted as loudly as they could."

It was shortly before 10.30 when Harry and Grieve arrived

at Buckingham Palace in response to the Royal telegram which had reached them during their southward journey of the previous day. They were received by the King, who in congratulating them and bestowing upon them the Air Force Cross, spoke in high terms of their attempt to make the crossing when the weather conditions were not entirely favourable. A few moments later the Queen and Prince Albert joined His Majesty to listen to Harry's and Grieve's accounts of their experiences. The conversation was informal, and Harry and Grieve were entirely at ease. The King asked many questions about the flight, and was particularly interested in Commander Grieve's methods of navigating when among the clouds. Harry said afterwards, "The King was as much interested in the scientific attainments of the flight as in anything concerning the adventure. He also questioned us closely upon the personal aspect of the trip, and was deeply interested in the description of our experiences and impressions. We were with Their Majesties about twenty minutes, and when we left, the King and Queen again shook hands most cordially with us."

On May 29th, after the visit to Buckingham Palace, Harry and Grieve were entertained to luncheon by the *Daily Mail* at the Savoy Hotel. Outside the hotel crowds of enthusiasts cheered them in appreciation of the high honours conferred at Buckingham Palace by the King earlier in the day.

In the absence of Viscount Northcliffe, who was unable to be present owing to an impending operation on his throat, Mr. Marlowe, chairman of the Associated Newspapers, Ltd., and Editor of the *Daily Mail*, received the large and distinguished company of guests.

Harry sat on the right of Mr. Marlowe, on whose left was Grieve, while the only lady present, myself, was honoured by the presence of the Lord Chancellor on my left and the Air Minister on my right. Among others present were :

Lord Inverclyde, Lord Morris, Lord Londonderry, Major-General Sir F. Sykes, Admiral Sir Edward Seymour, Mr. Cecil

Harmsworth (Under-Secretary for Foreign Affairs), Mr. Andrew Fisher, Sir W. A. Robinson, Sir Edgar Bowring, Sir Joseph Cook, Mr. John Walter, Sheriff Banister Fletcher, Sir Arthur Stanley, Sir George Sutton, Sir Campbell Stuart, Sir Marcus Samuel, Sir William Sutherland, Sir Howard Frank, Sir Jesse Boot, Sir Thomas Roydon, Sir George Frampton, Sir Squire Bancroft, Sir Thomas Devitt, Sir Herbert Morgan, Sir Robert Hudson, Brig.-General Sir Capel Holden, Sir Trevor Dawson, Sir Henry Dalziel, Sir Edward Hulton, Sir George Watson, Sir Samuel Waring, Sir Charles Wakefield, Sir William Treloar, Sir Harry Brittain, Sir J. Masterman Smith, Sir Frank Newnes, Sir E. Mountain, Major-Gen. Sir Sefton Brancker, Major-Gen. R. M. Ruck, Commander Perrin, Colonel F. K. Maclean, Mr. T. O. M. Sopwith, Mr. Handley Page, Mr. Claude Johnstone, Colonel T. O'B. Hubbard, Mr. Max Pemberton, Mr. Charles E. Hands, Mr. Howard Corbett, Mr. W. Lints-Smith, Mr. H. W. Wilson, Mr. James Douglas, Col. G. B. Cockburn, Mr. A. V. Roe, Mr. A. H. Fenn, Mr. Holt Thomas, Mr. Harry Preston, Mr. Gerald du Maurier, Mr. C. B. Cochran, Mr. Hamilton Fyfe, Mr. C. R. Fairey, Mr. Hamilton Fulton, Mr. R. O. Cary, Mr. C. Grahame-White, Major F. C. Buck, Major Heckstall-Smith, Mr. Sidney Pickles.

The chief table was surmounted by a floral model of a Sopwith biplane, and graceful floral propellers were suspended from the electroliers.

Following the Royal Toast, the Chairman read messages of regret from many distinguished people unable to be present.

The Duke of Connaught wired :

"I much appreciate having been asked to luncheon tomorrow to meet Mr. Hawker and Commander Grieve, and regret that I am unable to do so. With every Englishman I rejoice that these two distinguished airmen have been saved after their splendid endeavour to fly the Atlantic."

The Lord Mayor of London wrote :

"The City of London is immensely delighted that Hawker and Grieve were saved, and joins in the welcome you are offering them."

The Duke of Atholl wired :

"Much regret, owing to my being High Commissioner in Scotland representing His Majesty at General Assembly, it is impossible for me to attend the luncheon to Hawker and Grieve. I cannot say how proud we all are in Scotland of their performance, and congratulate them on their safe return."

From Paris, Mr. Hughes, Prime Minister of Australia, wired :

"I greatly regret that Fate denies me the opportunity of paying my tribute to one of Australia's most noble sons and his estimable navigator."

Admiral Sir Rosslyn Wemyss, First Sea Lord, telegraphed from a place which, as Mr. Marlowe said, was significantly indicated by a blank space :

"I regret that, owing to my having a Service engagement, I am unable to accept your kind invitation for to-morrow. I shall be glad if you will inform Mr. Hawker and Commander Grieve how sorry I am that I am prevented from joining in your welcome to them after their gallant attempt to fly the Atlantic."

Lord Weir, the late Secretary of State for Air, wiring from Glasgow, said :

"I sincerely regret that, owing to my departure for the United States, I am unable to accept your kind invitation to the welcome luncheon to Hawker and Grieve to-morrow. In affording this opportunity to two gallant airmen, the *Daily Mail* has shown the same spirit of enterprise which has always characterised its efforts on behalf of aviation."

Lord Northcliffe, who, as I have already stated, could not be present owing to illness, wrote :

"I regret that my physicians forbid my taking part in any public functions just now. Had I been present to-day I should have liked to elaborate a few outstanding facts connected with this occasion.

"The war has shown us that the courage of the sister nations of Australasia, Canada, South Africa, and Newfoundland is every whit equal to that of the small Motherland from which they sprang. The partnership of Hawker—the Australian flier—and Grieve, of the Royal Navy, has proved what can be achieved by unity of members of our British Commonwealth.

"Their flight is as great a step forward in the march of science as was the first important but unsuccessful attempt to lay the Atlantic cable, and it will so rank in history. The lessons they have learned will help forward the time when a direct Atlantic flight will be almost as easy as, and even more useful than, that across the English Channel.

"As remarkable as the exploits of our two heroes is the immutable confidence in Divine Providence of Muriel Hawker, who not for one instant faltered in her absolute belief that her husband would be restored to her.

"Were I present I should like to raise a glass in congratulation of our American friends on their careful and characteristic preparations for their fine record-breaking flight to the Azores and Lisbon. They have still left to us the problem of a direct flight from America to Europe. Personally I have no doubt but that, with the lessons and experience gained by Hawker and Grieve, a direct flight will soon be accomplished, and that by a British 'plane, with a British motor, manned by Britons."

Mr. Marlowe, in proposing the health of Harry and Grieve, said they were thankful that day to be able to welcome them back

to London and back to life. When the master of the steamship *Mary* last Sunday answered "Yes" to the enquiry of that excellent signalman at the Butt of Lewis, he lifted a burden of apprehension from many minds. "We have not all been able to share the serene confidence of Mrs. Hawker."

"When the two airmen started, weather conditions were not favourable, and if it had been a matter merely of winning the *Daily Mail* £10,000 prize the day would not have been selected; if that were all, Mr. Hawker could have waited for better weather, but he felt that for the honour of the British Empire he was no longer free to choose his time. The United States seaplanes were at the Azores, and Mr. Hawker decided to risk all, even defeat and death, rather than give up the palm without a struggle. That was the spirit of Australia, the glorious spirit of Mr. Hawker and Commander Grieve, which had touched the hearts of the people of this country.

"As Britons," continued Mr. Marlowe, "we give sincere congratulations to the United States airmen on their flight to Lisbon, completed on Tuesday. It was an historic performance and earned respectful admiration. But this afternoon we cannot refrain from congratulating Mr. Hawker and Commander Grieve, who, after all, in one way or another, got across the Atlantic first. In the present stage of flying there is no such word as 'failure.' Every effort leads directly to accomplishment, and the flight of Mr. Hawker and Commander Grieve will teach other airmen. It was not a failure: it was a great effort which contained the seeds of success."

The toast of "two very gallant gentlemen" was then honoured with enthusiasm.

General Seely, who next spoke, said:

"Mr. Chairman, Mrs. Hawker, My Lord Chancellor, My Lords and Gentlemen,—I think, my Lord Chancellor, you will allow that I put the precedence right just for once, for you take

precedence on all other occasions in a gathering of His Majesty's subjects—I have been asked to present to Mr. Hawker and Commander Grieve the cheque for £5,000 provided by Lord Northcliffe and the great journals with which he is associated.

“First of all, on behalf not only of the Air Ministry but of His Majesty's Government as a whole, and I know one may say of the whole of the people of Britain and the Empire, we rejoice to see you both safe and sound. It is a good thing that you have done. It has not been a useless thing. Apart from your start against adverse wind, not for the money, but for the honour of Britain, valuable lessons were learned. The lesson that Commander Grieve taught us is that in an aeroplane 15,000 feet up above the clouds you can, if you have got a cool head and steady brain, take accurate observations from the stars with a cloud horizon.

“There is another good thing, that there was no tinge of jealousy of our Anglo-Saxon brethren, the Americans. They were more anxious, I think, even than we were—and I cannot put it higher—for your safety when the news came that it was probable that you were missing. The American Ambassador told me last night that he believed there was more concern in the belief that you two brave men were lost than over almost anything else that had happened in America in his recollection. Of course, it was not an angry race—it was a generous emulation. Just as in the field for many months British and American soldiers vied with one another and finally succeeded in overcoming the foe, so we vie to see who will overcome the difficulties and dangers of the Atlantic crossing.

“Still less is there jealousy on the part of the Royal Air Force, for whom I am entitled to speak to-day. The presence of General Sykes, fresh from injuries sustained in a landing a little less fortunate than yours, though not so far from safety, testifies to one side of our organisation. General Trenchard, whom you know as Chief of the Air Staff, but better still, perhaps, as Commander of the Independent Air Force, to whom we owe so much for the

victory we gained, asked me to say on his behalf, and on behalf of the Royal Air Force, that he hoped you, Mr. Hawker and Commander Grieve, would accept a message from him—a characteristic, simple message :

“ ‘ On behalf of the Royal Air Force, I would like to add our congratulations and thanks to Mr. Hawker and Lieut.-Commander Grieve. I think that I can safely say that no one is a better judge of what this flight of Mr. Hawker and Commander Grieve really meant than the pilots and observers of the Air Force. They know the enormous amount of determination and grit that is required. They also know the appalling strain of waiting, waiting, waiting, until the weather gets ready, to do this long flight, and many a man with the necessary grit and determination has failed after waiting. We all know Mr. Hawker and Commander Grieve did not fail in this way, and this is the greatest compliment I can pay.’ ”

General Seely continued : “ On behalf of every officer in the Royal Air Force, I can say they are proud of your achievement, and that they rejoice that His Majesty the King was pleased to-day to give to each of you the Royal Air Force Cross for distinct acts of gallantry in the air.

“ I think I disclose no secret when I say that it was due to His Majesty’s direct intervention that all difficulties as to time and precise statutes and other difficulties and red tape were swept away in order that he, the head of the State, the head of our great Empire, might to-day present to you this coveted distinction for acts of gallantry.

“ These are two good men we are honouring to-day. Mr. Hawker, as I was told by one best qualified to know, by his technical and practical knowledge, by his nerve, skill, and gallantry in deciding every type of new invention during the war, contributed in the first degree to produce those wonderful machines which helped us to gain supremacy over the enemy. He may well

be proud of that war record. Then there is Commander Grieve, of the 'Silent Service,' who served with his comrades in the Royal Navy, and always with distinction.

"They have rightly had a welcome; they filled our hearts with joy because there was a happy ending to this glorious adventure with such possibilities in the future. They dared and did a great thing, but in the hearts of us all we rejoice, Mrs. Hawker, that your husband was brought back to you from the jaws of death.

"On behalf of the Air Ministry I am privileged to hand you this scrap of paper. It is a very real scrap of paper. It contains not only a generous gift from a man to whom the whole of aviation owes so much—and whom we hope shortly to see restored to health—but it is also an emblem of the thoughts of your country for a gallant deed done for the honour of your country. I congratulate you, Mr. Hawker and Commander Grieve."

Amid loud and prolonged cheers, General Seely then handed The *Daily Mail* cheque for £5,000 to Harry and Grieve. The cheque was the joke of the luncheon, for when it was all over Harry and Grieve were so busy signing autographs that they forgot all about it, until General Seely cried out, "What about this scrap of paper?"

Harry had an enthusiastic reception. Blushing and stammering slightly, he expressed his thanks for the handsome gift, and caused great amusement by alluding to his feat as a feeble effort which any one of the company would have performed in the same circumstances.

"When the Americans started," he said, "Raynham and I determined to proceed by way of the Azores also, as the wind was in favour of a journey by that route. But on Sunday week there was a change in the conditions, and I set off by the direct route. Unfortunately Raynham was unable to rise.

"We could not have wished for better assistance than we

had from the Air Ministry. The non-success of the wireless was not due to the wireless itself but to our fittings. As to the reports of ships, I think that if we had had ships every twenty yards apart you people would have looked on it as a joke and not a serious attempt to fly the Atlantic. If you are going to fly the Atlantic you have to weigh it up in your mind whether it is a serious proposition or a do-or-die effort, as the Americans like to call it.

"We weighed it up perfectly well, and it was a perfectly serious attempt in every way, and with the ordinary means and the ordinary amount of luck that you get in a machine there is no reason why you should not fly the distance to-morrow. You would think nothing of it over land. If you put a ship every fifty miles apart it only shows that you have no faith in your motor or in your machine."

Commander Grieve, also received with loud and prolonged cheers, said :

"When I left St. Johns I did not know how things would pan out. The sun was shining and there were clouds below. I said, 'Here are clouds, here is the sea, navigate as on the sea and use the clouds as your horizon'—with certain technical differences. This went on very well for four hours, until the middle of the night, when the clouds got up higher than ourselves at a time when they were most required. I got no sights for about four or five hours, until the moon came up and the clouds flattened themselves out a bit, and I managed to get a sight of our position.

"This only shows that navigation in aircraft is quite possible. Wireless is a valuable adjunct, the position of ships is valuable as a check, but unfortunately our wireless went wrong through lack of trial. We only got our fittings out just before we left. In every way, I think the navigation on the whole was a success, so far as it got.

"In conclusion, I would like, on behalf of my parents, to thank

the *Daily Mail* for the sympathy shown and for the way they kept them informed of events."

The health of Mr. Marlowe, the Chairman of the gathering, was proposed by the Right Hon. Andrew Fisher. Mr. Marlowe, in reply, said he could not help wishing that his chief, Lord Northcliffe, had been able to be present. All the great flying prizes which the *Daily Mail* had offered—the £10,000 prize for the flight from London to Manchester, another for a flight round England, the seaplane prize, in which Mr. Hawker played a very gallant part, and many others—all owed their origin to the personal initiative and action of Lord Northcliffe, who was, in his opinion, the first Englishman to foresee the great importance of aviation to the people of our islands, and to grasp, with that practical imagination which is one of his richest gifts, the developments of which it had shown itself to be capable.

On the morning of May 30th Harry, Grieve, and myself had the honour of being received by Queen Alexandra, who was greatly interested in the story of their rescue by Captain Duhn.

Later, Harry and Grieve were the guests of the Royal Aero Club at a luncheon in their honour at the Savoy. The menu was

Barquettes Hawker.
Suprême de Sole Atlantique.
Poulet Reine Sopwith.
Salade Southern Cross.
Timbale de Fraises Northcliffe.
Gâteau Danois.
Café.

In proposing the toast of "The King," the Chairman of the gathering, Brigadier-General Sir Capel Holden, paid a tribute to His Majesty's intense interest in aviation. His Majesty had, he said, acted according to the old motto, "He gives twice who gives quickly," by his having "done away with red-tape" in promptly decorating their two guests.

The Chairman also mentioned that in 1913 Harry was

congratulated on having been nearly successful in flying round Great Britain in a Sopwith seaplane for the *Daily Mail* £5,000 prize; and it was again owing to the foresight and generosity of Lord Northcliffe that the attempt to cross the Atlantic was due.

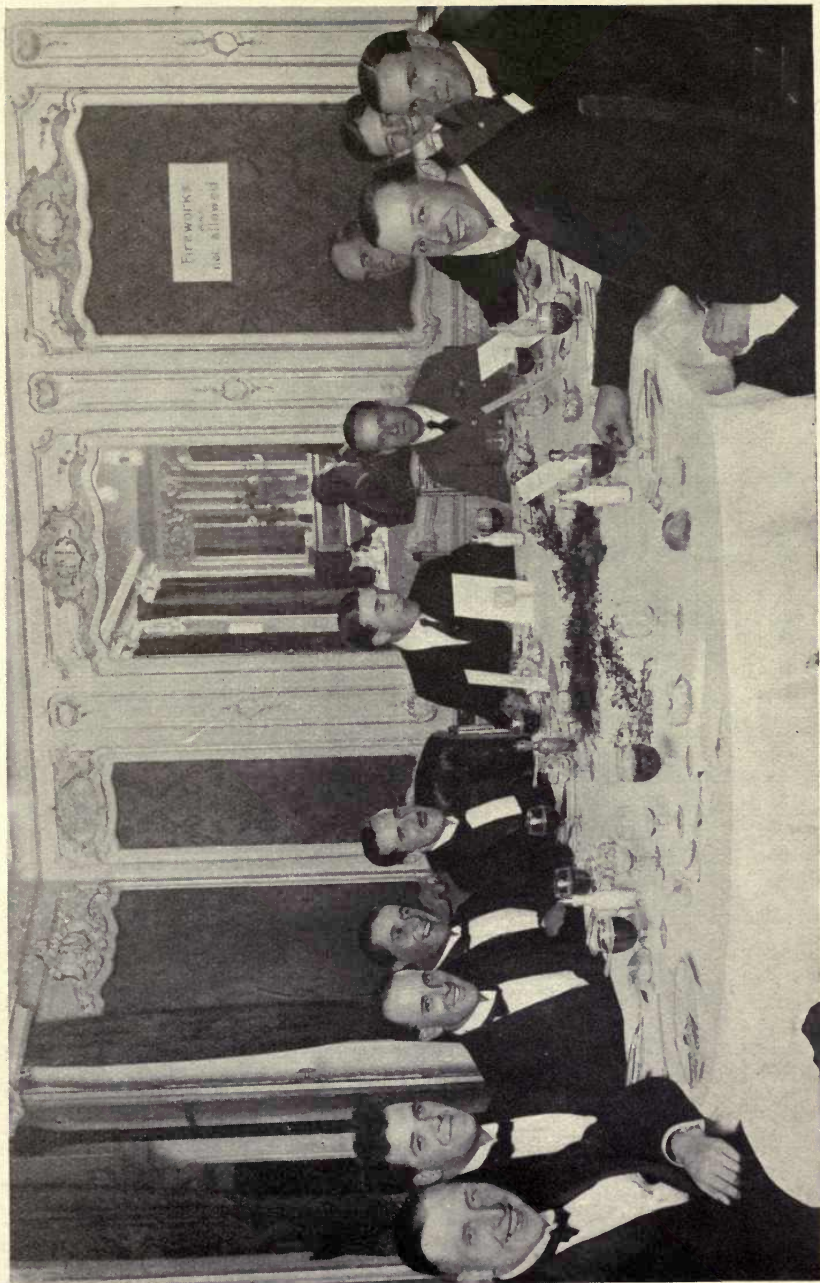
Mr. Thomas Marlowe said that Harry had given him to understand that if he and Grieve had not found the steamship *Mary* they would have found another in an hour or two, and that in any case there was no danger whatever—a statement which provoked considerable amusement. Mr. Marlowe paid a tribute to the very great assistance rendered by the Royal Aero Club, and in particular by the secretary, Commander Perrin, in the making of arrangements in connection with the flight.

Colonel F. K. Maclean, introduced as “the father of British aviation,” said he remembered how in navigation the compass had a habit of turning round and round somewhat faster than the machine. He had flown without a compass, but he thought that to get one’s position in mid-Atlantic, even with a compass, was the most extraordinary thing of which he had heard.

When the toast of Harry and Grieve was being drunk, an extra special cheer was given for me, and someone added, “And for the little Hawker!”—and so Pam was toasted too.

Harry was relieved of most of the onus of replying by Mr. Sopwith, who mentioned that he and Grieve had arranged to share the £10,000 prize if they won it in proportions of 70 and 30 per cent. Harry had, however, insisted that they should halve Lord Northcliffe’s prize of £5,000, because they had both suffered equal risks. Mr. Sopwith also paid a warm tribute to the generosity of Lord Northcliffe and to his staunch belief in aviation, and concluded by saying that Harry had told him that if he made another Atlantic flight he would have nobody else to navigate but Grieve.

Grieve said he was much amused to see himself referred to as an aviator in certain papers. “I’m not an aviator, and never will be. But it has been a great source of pride to me to be associated with the Royal Aero Club.”



TRANS-ATLANTIC AVIATORS' REUNION DINNER. THE LATE SIR JOHN ALCOCK IS ON THE EXTREME LEFT; MR. F. P. RAYNHAM ON THE RIGHT (NEAREST THE CAMERA); SIR ARTHUR WHITTEN-BROWN IN UNIFORM (OPPOSITE THE CAMERA); AND ON HIS LEFT LIEUT.-COMDR. K. MACKENZIE-GRIEVE, A.F.C. HARRY IS THIRD FROM THE LEFT OF THE PICTURE.

On Friday, May 21st, the American steamer *Lake Charlotteville*, bound from Montreal for Danzig, with 3,500 tons of flour and 500 tons of coal, sighted the derelict Sopwith aeroplane at longitude 49 40' N., latitude 29° 7' W. at 2 p.m., on her starboard beam. The machine was considerably more submerged than when it was abandoned by the aviators, and only the remains of the tail and the rear part of the fuselage remained above water, projecting vertically. The steamer arrived at Falmouth at 4 p.m. on the following Wednesday afternoon with the remains of the aeroplane lashed on deck in her forepart, looking at a distance like a broken perambulator. Although the engines did not appear to have suffered a great deal from the effects of the immersion, the aluminium was noticeably corroded with brine. The propeller was of course smashed and splintered, as also was the timber structure of the machine. There was a mass of twisted wires among the fractured wings and soaked canvas.

There was a heavy swell running when the captain of the *Lake Charlotteville* bore down on the derelict and, not knowing that the airmen had been rescued, searched for survivors. As a matter of fact, the machine was not so damaged when picked up as when it reached Falmouth. It was hoisted on board by winches, and later the sea swept the deck and caused further damage.

Harry was delighted when he heard that the machine had been salvaged. "Its recovery will be of the greatest value," he said, "for on it are many records which will be of great assistance to the future science of aviation. In addition there are a number of mails on the machine, which happily will not be very much damaged by the water, as they are in waterproof casings. Some of the appliances of most delicate construction and adjustment, too, are attached to the machine, and these, we hope, will give first-class information for future flights."

The undercarriage, which Harry had released before passing beyond the Newfoundland coast, was subsequently found and now reposes in the museum at St. Johns.

After all the necessary festivities were over we decided to leave London for a little while.

We went to stay at a little seaside place in Norfolk where, for the first evening at least, Harry was quite unknown. It was a very enjoyable rest, but the next day, returning to lunch after a long walk along the coast, we were met with many interested glances, and at lunch a small child appeared with an autograph book. This spoilt everything, and by tea-time the whole village had brought their books for signatures. We hastily arranged to leave the place. We had not used the Sunbeam, since it might have been conspicuous, but this had evidently been the tell-tale, and we left for Cromer. Harry's popularity at this time must have been enormous, for the crowd that assembled round the hotel when it was known he was staying there was quite a terrifying spectacle, and again we left. We went for a short tour then, staying one night in each place, and then went back, Harry being anxious to superintend the construction of the new Schneider Cup machine.

Towards the end of August the machine was ready, and we went down to Southampton for a week or two before the race, which was to be held on September 10th at Bournemouth. Harry sent his racing motor-boat down with the machine and used this boat as a conveyance between Southampton, where we stayed, and Hythe, where the machine was housed. A very serious accident was only just averted on the machine's maiden trip. The machine was small, fitted with a 450 h.p. Cosmos Jupiter engine, fitted with special floats made to Harry's design. After starting up the engine, however, prior to her first flight, and opening out to get away, instead of speeding across the water the machine gave a lurch and dug her nose into the water, the tail coming up until it was almost perpendicular. The cockpit of the machine was very small, in fact so small that only a tight-fitting sweater could be worn in it, so it was not the quickest thing to get out of in the case of emergency. However, it was not many seconds before Harry appeared out of the cockpit, from which he

hopped with agility, shouting to the mechanics on the slipway to hang on to the tail to prevent the machine sinking. They successfully beached the machine, and it was discovered that the floats, by some error in the drawings, had been fitted too far back. The machine was packed up under Harry's supervision with extraordinary haste and was ready on the lorry to return to London. The lorry was then found unfit for the journey, something having happened to it on its journey up. Harry, nothing daunted, had decided that the machine was to go to London that night, and so it did. He got his Sunbeam from Southampton, to which he securely fastened the loaded lorry and towed it, at a speed that must have made the lorry's hair stand on end, to London that night. There are occasions when the very high-power car has its uses which the smaller car could not carry out.

Within two days the machine was back, and it exceeded expectations in the form of speed, attaining at one time a speed of 180 miles per hour.

Four British entries for the Jacques Schneider International Seaplane Race, necessitated eliminating trials being arranged on September 3rd at Cowes. At the time of the start only three of these turned up—*Supermarine* (450h.p. Napier Lion, piloted by Squad.-Com. B.D. Hobbs, D.S.O., D.F.C.), the *Fairey* (450h.p. Napier Lion, piloted by Lieut.-Col. Vincent Nicholl, D.S.O.), and Harry, so the eliminating trial was unnecessary, the Avro being held as reserve. This was very lucky for Harry, as on alighting on the water he was seen to be sinking rapidly, and only succeeded in getting to land with the aid of a rowing-boat, which was put under a float. It appeared that a large part of the undersurface of the float had been torn away by some floating object on landing and so it would have been necessary to get new floats before another flight was made.

Harry had the broken floats removed and put on *Kangaroo II*, his own motor-boat, for removal back to Hythe. This hydroplane was designed to carry two people at speed, and not as a useful conveyance for friends and baggage, so it was with feelings

of qualm that I took my seat beside Harry, my sister on my knee, two floats securely tied on the bows, and two men at the stern. Heading towards the Solent it did not take much movement of a limb to list the boat, and Harry was continually singing out, "Trim the boat!" However, in rounding the bend out of the harbour into the open sea the *Kangaroo* decided it was over-worked, and thereupon turned over completely, pitching all and sundry on the waters. Only one of the party could not swim, and he luckily found a float at hand to which he desperately clung.

It is no joke to be suddenly put in the sea clothed in thick coats and furs. The first few minutes one swims with much gusto, but things get very heavy after a little while and a kind of effort is required to keep up.

Harry bobbed up somewhere near me and started a sort of roll-call. Meanwhile a rowing-boat had put out from the shore and come alongside my sister and I. We had just about had enough of floating about, although I do not suppose it was really so long as it seemed, and thankful enough for the boat; but suddenly one of the two Australian soldiers, who had pushed out the first boat they could find, found it was sinking, and unceremoniously left for the shore alone. They had forgotten to put the bung in! However a launch soon came up and we were safely "beached." Harry towed the *Kangaroo* to shore, where he found the magneto had suffered badly by its immersion in water, and proceeded to dismantle it. By about nine o'clock he was ready to start back with it, this time without the floats. It was quite dark, and little more than half-way across the Solent the magneto gave out again. They moored behind an anchored vessel and in the dark Harry had no little job in getting things right. He eventually arrived back at the hotel at about eleven o'clock, still in his wet clothes. As for my sister and myself, Mr. Smith, who was one of the victims, took us back by the Southampton steamboat, in which the captain, hearing of our plight, kindly allowed us the use of the engine-room as a drying-ground, and for the journey of just over an hour we steamed away merrily.

The new floats were procured, but the actual race itself was a fiasco.

There were three French and one Italian competitor beside the English, and on September 10th, the day of the race, the weather was good and everyone had arrived. Just at the hour arranged for the start a thick fog descended, completely blotting out the points to which the machines had to fly.

Harry, who had again damaged his racing floats on landing at Bournemouth from Hythe, only just managed to get off the water with one float nearly submerged. In the compulsory landing after one lap he landed near the shore, the machine being pulled on to the beach by the mechanics before it had time to sink.

The fog had not lifted, and as it was impossible to find the boundary buoys everyone gave it up, with the exception of the Italian competitor, who did round after round at a terrific speed, but it was very doubtful if the actual round was flown each time, as the outpost people could not distinguish the passing of any machine.

In fairness to the Italian competitor, it must be said that nearly all the French and English competitors had had float trouble, and it was doubtful if, had the weather been good, he would have had many rivals. There was a good deal of controversy afterwards as to whether the Cup should be awarded; ultimately it was agreed that the race should be run the following year in Italy, but the 1919 race was to be considered as null.

After this race Harry and I had arranged to go to Scotland on a visit to Mr. Sopwith, there to enjoy a stag-shoot. Harry was an exceptional shot, and the previous autumn had had the unique experience of shooting two royal stags in one day. This year, however, the railway strike prevented our going, which naturally was a great disappointment to Harry.

CHAPTER XIX

MOTOR RACING

Harry Turns to Motor-racing—Successful Début at Brooklands—Why I Stayed at Home—The 250 h.p. Sunbeam Touring Car Takes Second Place—When the 450 h.p. Racer Comes on the Scene—Harry Drives the Largest Car in the World—A Terrible Crash—Without Serious Consequences—Back to the Air—The R.A.F. Tournament—Reunion of Pioneer Aviators—Eleventh-Hour Entry for the Aerial Derby—Second Place, but Disqualified—A Very Busy Month—Aeroplane Trials at Martlesham—British International Motor-boat Trophy at Cowes—More Motor-racing at Brooklands—His Aeroplane Enables Harry to be (nearly) in Three Places at Once—Harry "Brings Home" a £3,000 Prize for the Sopwith Company at Martlesham—I Decide that Motor-racing is Too Risky—And Fate Deprives Harry of a Race—Motor-boat Racing—Racing an A.C. Light Car—And a D.F.P.—The Gordon-Bennett Air Race of 1920—Bad Luck—The 450 h.p. Sunbeam Again.

CHAPTER XIX

DURING the winter of 1919-20 there was little to be done in the way of flying and the prospects of it recovering its pre-war popularity not very hopeful. Harry looked round for other fields of achievement to fill in the spare time he now had on his hands. Always keen on the possibilities of the racing car, it was with great enthusiasm that he accepted the offer from Mr. Coatalen to drive the new 6-cylinder racing car which Sunbeam's had built for the meeting at Indianapolis and wished to put through its paces at the first post-war Brooklands meeting on Whit-Monday, 1920. Harry went down to Wolverhampton to see the car, and was amazed at the care with which the racing cars are produced, and to quote his own expression, "The Sunbeam people do the whole thing properly." A day or so before the meeting the car was brought down by road from Wolverhampton, and the trial runs on the track proved more than satisfactory. The race-meeting itself was a record one, and the scene, even for Brooklands, a memorable one. "From the bottom of the Test Hill to the entrance to the course the track was lined on both sides with packed masses of cars, while the Hill was crowded with people breathlessly following the fortunes of their favourites as the burnished bonnets of the great cars glittered like shooting stars round the great track," to quote from a current issue of the daily Press.

Judging by his reception and the notices which appeared on Tuesday, Harry was the popular figure of the day. In the first of the two races in which he was to drive the Sunbeam six, the Short Lightning Handicap, he won the race from scratch, overhauling his most formidable opponent, Mr. Kilburn's Vauxhall, just as they were entering the finishing straight, when his average

speed from start to finish was $98\frac{1}{2}$ miles per hour. Harry's victory in this, and again in his second race, the Long Lightning Handicap, where after an exciting race he was first home by about a length, brought him a tremendous reception from the delighted crowd. His best lap for the day was at the speed of $106\cdot65$ miles per hour.

It is interesting to note that in passing the Opel, another competitor in the first race, at a very bumpy part of the track the gear lever of the Sunbeam jumped out of gear, and in attempting to replace it Harry accidentally put it into second gear. The car continued to gain on the Opel, and before changing up into top while running at 100 miles per hour the revolution counter showed the extraordinary turnover of 5,700 revolutions per minute. Afterwards the motor was dismantled, but no damage of any description had been incurred by this exceptional achievement.

This was Harry's début as a motor-racer, and it was the first day of complete success he had ever had. I well remember him saying that now he felt his luck had changed and he was finished with failures, glorious or otherwise.

It was a great disappointment to me not to have seen his first attempt at motor-racing, but Mary, who was born on the anniversary of Harry's start to fly the Atlantic, and named after the boat which subsequently saved him, being a few days old, I was reluctantly compelled to stay at home and be contented with watching them set out in the car in the morning, receiving my reward when just after tea they all returned home bubbling with pride.

This new form of speed had got well hold of Harry, and he filled in the time before the next meeting, at which he was to drive the new 450 h.p. Sunbeam racer, the largest car in the world, by tuning up his own 12-cylinder Sunbeam. Stripping the car of all unnecessary equipment—lamps, mudguards, wind-screens, etc.—he attained, after much "changing of jets" and general tuning, a speed of 107 miles per hour with a four-seater touring body. Shedding about half the rubber off a front tyre, high on

the banking at nearly 100 miles per hour, causing a series of tremendous skids out of which it did not seem possible to straighten successfully, did not deter him, for he seriously contemplated having the car properly streamlined. Luckily the 450 h.p. Sunbeam got down to Brooklands, and after a run on her Harry brought our Sunbeam home, spent an evening tightening up the body everywhere and replacing all the impedimenta. He also ordered new tyres, saying that, after all, a car only capable of under 110 miles per hour was only fit for a touring car, and so ended its racing career.

On June 26th, the B.A.R.C. held their Midsummer Meeting, at which the 450 h.p. Sunbeam was to make its début.

The car not having arrived down from Wolverhampton until late in the week, Harry decided to give it a lap or two on the morning of the meeting. Accordingly he set out early on his Ford, and I was to follow later with the Sunbeam. We arrived at the gate and, the congestion being so great, we were held up for some time in the "queue." During the wait someone coming on foot from the paddock shouted across to some people in a car near us, "Hawker's crashed on the Sunbeam in practise!" What one does on these occasions is generally hard to remember, but I know I got out of the stationary car and walked on to the paddock, almost dazed, to find out what had happened. Arriving at the gate, the sight of Harry standing there was such a relief that instead of hurrying to tell him of the great anxiety of the last few moments I could say nothing. He was surprised to see me walking in, and asked where the car was. "You don't generally walk to Brooklands."

"And you don't generally wait patiently just at the gate for me to come."

"No," he replied, "but I have just blown a tyre off the Sunbeam and shan't be able to race to-day, so I've nothing on earth to do."

So much for coming off the banking at the fastest part of the track with a flat tyre at something over 110 miles per hour, crashing

through a fence and jumping a ditch the other side. A Press account of the accident taken from Harry's own description of the incident shows how a terrible disaster was only just averted.

"Hawker had the car out on just an ordinary race-meeting practise run. On the banking under the Members' Bridge the car was doing 125 miles per hour beautifully, with plenty of power and speed in hand, a black-snouted, white-bodied speed monster, hurtling round in the fresh morning air, well up the banking, when—the Fates being liverish—the front offside tyre burst. A swerve, a struggle with the wheel, utter disaster averted, and with the front axle chattering uncushioned on the concrete the car plunged on under its momentum down the railway straight. Try as he will, Hawker cannot get the car to answer to the wheel and bear left. The drag of the erring tyre holds it to the right of the track. Careering almost parallel with the fence which runs alongside the straight for a quarter of a mile, the car at last digs its forepart into the corrugated iron sheets, still doing over 80 miles per hour, rips them apart for eleven or twelve yards, gambols obliquely down a four-feet drop, and finishes up on all fours, right side uppermost a paling immovably jammed in one of the front wheels, but otherwise unhurt. Mr. Hawker, too, seemed but little shaken by his experience and far more interested in the glorious running of his mount before taking the toss than in the accident itself."

On the same day during a race the 6-cylinder Sunbeam, the car which Harry had handled at the previous meeting, came to grief. What actually happened was not definitely known, but the car was seen to swerve at almost the same part of the track that Harry had his trouble, and, after coming down the railway straight, left the track for the Sewage Farm, where it turned two complete somersaults, the driver, Captain Geach, miraculously escaping any serious injury. Perhaps it was the penalty of fame or a proof of popularity that in the next morning's papers there

were lurid accounts of Hawker's escape from death, one heading reading, "Hawker, the man who won't be killed!" while little comment was made on Captain Geach's more serious accident.

A few days later, July 3rd, saw him in the air again, at the Royal Air Force Tournament at Hendon, where a huge crowd had assembled to witness what proved to be the finest exhibition of all kinds of flying ever seen in one afternoon. Here Harry, on his Swallow monoplane, went through a series of stunts which he loved so well, and according to a current flying paper, "executed many extraordinary evolutions which seemed quite different to those just witnessed."

Perhaps it would have been more extraordinary still to all those watching him had they known he was undergoing certain treatment for his back at this time that caused him great pain and sleepless nights. During the time that he was receiving this drastic treatment he was hardly fit to be walking about, and certainly not to be flying and racing, but with that indomitable courage and determination to go on as usual, he refused to give up any part of his work.

On July 12th he was present among numbers of well-known airmen at the dinner given at the Connaught Rooms to the survivors of the first hundred British aviators. Forty-eight of that number were present, including two women, Miss Bacon and Mrs. Hewlett. The Duke of York, who was present, replied to the toast of the Royal Family, in which speech he modestly referred to himself as an indifferent pilot.

The Aerial Derby for 1920 was arranged for July 24th, but Harry not having a machine which could put up a good enough "show" decided not to compete, but agreed to come over to Hendon during the afternoon on the Swallow and help to amuse the crowd during the somewhat tedious wait from the start of the last competitor to the return of the first. About a day before the race, gripped by the lure of the contest, he decided to fly the Sopwith Rainbow and take a sporting chance. Immediately his entry was received the papers announced Hawker's mount as

the "dark horse" of the race, and consequently he became favourite, with three machines faster than his as competitors.

However, they say the public backs the pilot, as though by some extraordinary prowess the popular favourite can produce an extra ten miles per hour from his mount.

The Rainbow was the Schneider Cup machine of 1919 with the floats replaced by a land chassis and the Cosmos Jupiter engine substituted by an A.B.C. Dragonfly engine.

In a field of sixteen competitors Harry was No. 13 to start, having $1\frac{1}{2}$ minutes' start on the Bristol Jupiter, eight minutes on the Martinsyde Semiquaver with 300 h.p. Hispano Suiza, and 9 minutes on the Nieuport Goshawk with 320 h.p. A.B.C. engine.

Harry made a very spectacular get-away at 3.47 and was soon out of sight in his attempt to catch up the twelve other competitors, the first of which had started just over one hour and a half before. He flew high, as he always did, and was back again at Hendon, having completed the first of the two laps of 100 miles in 41 minutes 31 seconds. The Nieuport Goshawk, the fastest machine in the race, having landed at Brooklands, and Harry having passed the Bristol Bullet during the lap, the Martinsyde Semiquaver was the only fast machine to be overtaken.

The last machine to finish the first of the two circuits to be flown was the Martinsyde F4, which arrived at 4.40, and fourteen minutes later Captain Hammersley arrived on his Baby Avro (30 h.p. Green engine), having completed his second lap, and was thus winner of the Handicap.

The winner was closely followed by Hinckler on an identical machine, and ten minutes later Harry appeared at speed, having picked up nearly $1\frac{1}{2}$ hours on these two machines, when, except for finishing incorrectly, he would have taken second place in the Aerial Derby and third in the Handicap. He was unfortunately ruled out of the race, as he finished by flying straight across the centre of the aerodrome, as in previous years, instead of making a circuit of the pylons. The Semiquaver then appeared, having finished the whole of the course of 205 miles in 1 hour 18 mins.

as against Harry's 1 hour 23 mins., and so won the Aerial Derby. Unfortunately, in landing, the Semiquaver overturned, but the pilot, Mr. Courtenay, who had at the last moment taken Mr. Raynham's place, was uninjured.

The next month was a very busy one for Harry, as during one week his presence was required in three different places each day as far apart as Cowes, Brooklands, and Martlesham Heath in Suffolk, and he was only enabled to do this by the use of his monoplane.

The first fortnight in August he was due at Martlesham Heath, to fly the Sopwith Antelope through the Air Ministry Competition.

On August 4th, 10th, and 11th, he was to steer *Maple Leaf V.* in the British International Trophy at Cowes, and on August 2nd he was to drive the 12-cylinder Sunbeam racing car at the Brooklands Meeting.

As it was necessary to spend a good deal of time in practise and trial before each of these events, some idea of the effort required to carry them through may be gathered.

The Air Ministry had offered prizes of £64,000 for speed and reliability of the various types of aircraft, and the Sopwith Aviation Company entered the Antelope, fitted with a Wolseley Viper engine, to compete in the small type of machines. This machine had an enclosed saloon for its two passengers, fitted with two comfortable armchairs, sliding windows, a sliding panel in the roof, by which when sitting in the raised chair one could have the benefit of an open machine if required. A hot and cold air regulator was fitted and also a speaking-tube to the pilot in front.

The tests consisted of slow flying, speed, economy (a comparison between useful load carried, in pounds, not including weight of pilot, oil, and petrol, and the amount of fuel and lubricant consumed), landing and getting-off tests, and self-controlled flights.

In the slow flying test the Antelope got down to 43 miles per hour, the lowest recorded, and in speed attained 110·35 miles per

hour, the second best performance. It also put up a good performance in the landing tests in which the machine had to land in a given circle over a row of balloons tethered 50 feet from the ground by means of threads. The Antelope, in landing in 187·7 yards, beat all the others by a good margin, the second being the Westland Napier, taking 235 yards.

In economy the Antelope took second place, and also in the getting-off test, taking 23 feet as against the Westland's 22·75 feet.

Harry arrived from Cowes on the monoplane and was soon up with the Antelope on the reliability tests, which consisted of two three-and-a-half-hour periods at a speed of not less than 80 miles per hour and at above 3,000 feet up. Harry took Mr. Sopwith as passenger and carried out both periods himself, although a different pilot was allowed for the second three-and-a-half-hour test.

In the uncontrolled test the Antelope flew for five minutes by itself.

The result of these competitions was very hard to judge, the Sopwith and the Westland running very close together, but the official result showed the Westland first, thus winning the prize of £10,000, and the Sopwith gaining the second prize of £3,000.

During this time Harry had been officially living at Martlesham, flying down to Cowes almost daily on the monoplane to watch the progress of the Saunders boat which he was to steer in the British International Trophy.

On August 2nd, Harry was to drive the 450 h.p. Sunbeam at Brooklands. The narrow escape which he had with this car at its first public appearance on the track perhaps accounted for the unsportsmanlike attitude I took up on the occasion of its second.

While Harry was staying at the aerodrome at Martlesham I was at Bournemouth with the babies, and on the Friday before the race-meeting on Monday, Harry came down for the week-end. On Saturday he went over to Cowes to see how the Saunders boat was progressing for the coming race, and returned to London on

Sunday. Perhaps it was continually hearing from people who knew, or should know, that the wonderful new Sunbeam car was too fast for the track, and catching straysentences, as one does in the paddock, I could not rest. On the Friday he came down I tried to persuade him to give up the racing on Monday, but I only succeeded in thoroughly upsetting him, as I did not see the position I was putting him in, and that he had no excuse for cancelling his arrangements for the track at the eleventh hour. I expect the unusualness of my attitude worried him, since it was the first time I had tried to deter him from any of his precarious activities. On Monday morning I decided to go to town, praying that something might happen to prevent his driving the car. Arriving at Surbiton, I found the only car in the garage was the racing A.C. before it had come into fame, which I managed to start, and arrived at Brooklands past the time of the Sunbeam's first race.

I found Harry and Mr. Coatalen beside the car, which had not been out, as its first race had been passed over through wetness of the track.

Surprised at seeing me, Harry told me to cheer up—he had had some laps in the morning and she was running beautifully.

The time approached for the second and last race, and, the track having dried, the meeting was resumed, and the huge 450 h.p. car roared out of its "stall" and slowly made its way to the starting-line.

Having by this time worked myself into a perfect example of the panicky old woman, and with the words "too fast for the track" always tingling in my ears, I longed for anything to happen to stop its racing, quite regardless of any possible damage to the reputation of both driver and maker in the fear of the awful something that might happen. I watched all the competitors start one by one, as of course the Sunbeam was scratch, and when, as it was standing roaring on the line, the flag fell for it to start, there was a jerk and a silence. Harry had stopped the motor on the line, and the Sunbeam was not to be seen at speed at that

meeting. Such carelessness, accident though it was, and so unlike Harry in any of his efforts, especially when I knew his heart was set on doing well with the car, was hard to understand. I knew that, although I had got what I prayed for, I had failed him, and his disappointment afterwards was my punishment. He said very little about it afterwards, just called it "damn bad luck"; but then he was always the real kind of sportsman—a good loser.

He took me to the station next morning on my return to Bournemouth, and saying "Good-bye," added, "See you at Cowes to-morrow for the B.I.T.; it will sure to be some fun," and the whole incident was forgotten.

The next day, August 4th, he was out on *Maple Leaf V.*, in practise for the eliminating trials which were to be run off during the day.

Maple Leaf V., entered by Sir E. Mackay Edgar, Bart., was 39 feet in length, equipped with four 12-cylinder Sunbeam engines of 400 h.p., making a total of 1,600 h.p. The hull was built of the famous "Consuta" wood, which looked, but was not too fragile to bear the weight of those four enormous engines.

Maple Leaf VI., steered by Lieut.-Col. A. W. Tate, D.S.O., was of similar construction, fitted with two Rolls-Royce engines together supplying 1,100 h.p.

There were six British entries for this Trophy and eliminating trials were to be held to find the three best boats.

The 900 h.p. Sunbeam-engined *Despujols II.* shipped water just before the start, and all efforts to start her up failed.

Bad luck was also experienced by *Miranda V.*, a 33-foot Thornycroft boat equipped with an engine of 475 h.p. of the same name, which, although first over the line at the start, had to give up hurriedly in the first round, making for shore with a hole in her stern by which she filled rapidly, and finally sank in shallow waters near the shore.

The remaining four boats consisted of *Maple Leaf VI.*; a 39-foot Saunders boat fitted with two Rolls-Royce engines of 1,100 h.p.



HARRY ON BOARD A YACHT DURING ONE OF THE PERIODS WHICH
HE DEVOTED TO MOTOR-BOAT RACING.



PAMELA SETS THE PACE ON THE LAWN AT HOOK.

complete; the 8-metre, 450 h.p. Sunbeam-engined *Despujols*; and *Tireless V.*, a Cox and King boat fitted with Green engine of 900 h.p.

The results of the trials were *Maple Leaf V.*, *Despujols*, *Maple Leaf VI.*, and lastly *Tireless V.* The time results were very disappointing, the winning boat having averaged little over 30 knots.

America had sent over three representatives in the form of *Miss Detroit*, of 38 feet length, and *Miss America*, of 26 feet, both fitted with 800 h.p. Smith Marine Twin motors, which were rebuilt Liberty aeroplane installations of two V-type engines of 400 h.p. each. The third boat was *Whip-po'-Will*, which during a preliminary run a few days earlier had burst into flame and sunk, and was a complete loss.

The total course of the race was 33 nautical miles, broken up into five rounds.

At the start of the first race on August 10th there was some dexterous manœuvring for the advantage of being first to get away, the boats circling round a space before the starting-line while three-minute signals were given. Harry managed to get *Maple Leaf V.* over the line first in great style, 12 seconds after the gun had fired. He was followed after an interval of 8 seconds by *Miss Detroit*, *Miss America* following but 1 second behind.

Maple Leaf VI., steered by Lieut.-Col. A. W. Tate, D.S.O., soon followed, and *Despujols*, steered by Sir A. G. Guinness, Bart., brought up the rear 33 seconds after the gun. At the end of the first round *Miss America* showed her superiority, leaving *Maple Leaf V.* to set the pace to *Miss Detroit*; *Maple Leaf VI.* throwing up spray and seeming to proceed by means of hops, gaining for herself the name of *The Kangaroo*, passed the line fourth, and *Despujols* last. The same order held for the second round, while in the third round Harry's boat was seen to be in trouble, and in the fourth round seemed almost to stop. He managed, however, to complete the course well within the time limit on one engine, thereby qualifying for the second race. The race

had been easily won by *Miss America*, followed by *Maple Leaf VI*. *Miss Detroit* had engine trouble, but finished the course.

The next day the weather proved good, the sea being quite calm—too calm for the British boats, who hoped for a choppy sea—and there was hardly a breath of wind blowing in Osborne Bay.

The start this time was a good one, *Maple Leaf VI*. being over the line first 7 seconds after the gun, the last man away being within 20 seconds. When the boats got thoroughly going the order was *Miss America*, *Miss Detroit*, *Maple Leaf V.*, *Maple Leaf VI.*, and *Despujols*. This order was maintained till the finish, *Miss America* winning easily. The actual times over the whole course of 33 miles were :

<i>Miss America</i>	37 min. 9 $\frac{1}{2}$ sec.
<i>Miss Detroit</i>	37 " 43 $\frac{3}{4}$ "
<i>Maple Leaf V.</i>	37 " 59 "
<i>Maple Leaf VI.</i>	40 " 59 $\frac{1}{2}$ "
<i>Despujols</i>	41 " 5 $\frac{1}{2}$ "

The average speed of the winner over the whole course was slightly faster than in the first race, *Miss America*'s speed being 53.42 miles per hour as against her speed the day before of 51.45 miles per hour.

The American boats were conspicuous by the manner in which they skimmed over the water, which they hardly seemed to displace, and very little white spray ever appeared. It was quite easy to distinguish the various boats at a distance by the amount of foam. *Maple Leaf VI.* could easily be found by the periodic banks of spray as she "hopped" along, and *Maple Leaf V.* seemed to proceed through two walls of water. And so the British International Trophy went to America for the fifth time since 1903.

On September 4th, the date of the Junior Car Club's Autumn Meeting, Harry, in entering an A.C. car which he had lately acquired, was to have made his first attempt at light car racing.

His entry was received and accepted, and it was not until the cars were lined up in the paddock prior to entering the track that the gods that be decided not to permit him to race as the car was not standard.

The car was a new 4-cylinder overhead valve model which the A.C. Company had made with a view to a fast standard sports model production, and the race was for standard cars only. But the word "standard" involuntarily brings a smile when applied to any of the veterans' mounts. And also being a handicap race, there is always the energetic handicapper at work at Brooklands who has a wonderful knack of letting the light in on dark horses. However, if the mount had been a Mr. Brown's entry it would probably have been allowed to race, and possibly even spoilt the reputation and interest it gained that day, but the speeds put up by the rest of the standard cars must have brought complaints from many a disappointed owner, who, trading on his all too standard production to little effect, wondered if personal training would produce the missing 20 or so miles an hour.

On September 25th, at the last B.A.R.C. Meeting of the year, Harry, having formed a company in Australia with an agency for D.F.P., cars decided to enter a perfectly ordinary 4-cylinder D.F.P. car.

The handicapper notes H. G. Hawker's entry of a D.F.P., gives him plenty of time at the starting-line to study the various "get-aways" of the other competitors, and has the satisfaction of seeing him coming up the finishing straight as the cars for the next race were proceeding to the starting-line, having been "all out" the whole race. So much for a name.

Harry's next activity was to have been, with any sort of luck, as one of the three representatives for the Gordon-Bennett Air Race of 1920, to be held at Etampes, France, on September 28th, the other two entries being Raynham on the Martinsyde Semi-quaver which had won the Aerial Derby, and Tait Cox on the Nieuport Goshawk, which had also flown in the Aerial Derby.

Fear was expressed as to the possibility of the latter's entry owing to the closing of the Nieuport firm, but although the entry was satisfactorily arranged, it was not among the starters in the race, as it had not arrived at Etampes early enough the previous day to comply with the rules.

Neither was Harry's ill-luck at rest, as a week or so before the race it was found necessary to withdraw the machine, the Rainbow, fitted now with the Bristol Jupiter engine in place of the A.B.C., owing to the liquidation of the Sopwith Aviation Company. These were the beginning of the very lean days which do not seem to fatten even yet, and England was left with the Semiquaver as its only representative.

There were three American and three French entries, which latter country had but to win the race this time to gain the Cup right out, having won the two immediately preceding competitions.

Any competitor could fly the course any time after 7 a.m. during the day, and times were compared afterwards to ascertain the winner.

Raynham was the last of all the competitors to start, and it was a very melancholy moment for England when, with Tait Cox standing by his disqualified machine, and Harry, hands in pocket and no machine, Raynham was seen to descend after the first lap owing to oil trouble.

Harry and Raynham, staunch friends and rivals since the days of the Michelin Cup incident in 1912, consoled each other, bemoaning their "same old rotten luck as usual." And who had attempted more, from the days when flying was a very risky hobby, and failed so often, than these two sportsmen? The Trophy was won outright by the French.

Early in December it was arranged that Harry should attempt to break world's records for short distances with the 450 h.p. Sunbeam. A day was chosen and the track booked for the event. A very large gathering of the Press sat down to an excellent luncheon, but the weather clerk did not approve of the

proceedings, as rain fell heavily all the morning. Hopes were entertained of the track drying after lunch, as the rain had ceased, but these hopes were not fulfilled. However, during the afternoon Harry took the car round for a few laps, but although a speed of nearly 125 m.p.h. was attained, it was not a fair test of the car, as owing to the wet and greasy state of the track the wheels failed to grip and most of the power was lost. The revolution counter showed a speed of 140 miles per hour had the wheels gripped the track.

It was disappointing to the many people present, but one cannot back the English weather in December, and it was visibly unsafe to attempt anything further on such a wet day.

CHAPTER XX

MOTOR ENGINEERING AND RACING

Formation of the Hawker Engineering Company—The Racing A.C.—Amusing Experiences—Remarkable Performances Due to Efficient Streamlining—Several Records Broken—An Accident—The Hawker Two-stroke Motor-cycle.

CHAPTER XX

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IMMEDIATELY after the war efforts were made by the Sopwith Aviation and Engineering Company to turn out domestic utensils from aluminium. Mr. Sigrist tells the tale of Harry walking into his office one morning after discovering the new object the firm was to produce, and sitting down, said : "Well, Fred, what do you think of it ! Saucepans ! Where do I come in ? I never thought I should live to find myself in a job that Mrs. Beeton could do better than I."

I believe a good many saucepans were made, which, according to a contributor to a flying paper, "involved strenuous work on the firm's chief tester," and also a certain wooden toy was turned out in good numbers ; but the firm commenced real post-war work in the production of the A.B.C. motor-bicycle.

The company continued with the production of this cycle for some time, but was eventually unable to weather the slump of 1920, and in the September of that year the Sopwith Aviation and Engineering Company closed down.

In November a new company was founded by Messrs. Sopwith and Sigrist and Harry, known as the H. G. Hawker Engineering Company, which started in the production of a 2-stroke motor-cycle and also special aluminium body-work. After the appearance of Harry's streamlined A.C. a considerable demand for like racing bodies appeared, until most of the best known racing light cars became furnished with Hawker streamline bodies.

In the meantime Harry had been working hard at every spare moment on his A.C., the acquisition of which is very interesting. One day in the summer Harry went for a short run with one of the directors of Messrs. A.C. in a new model fitted with an over-

head valve engine. It was purely an experimental production, and after the run Harry wanted to see the drawings. He immediately saw possibilities as a racing car, and then and there wanted to buy it. He did buy it, and then followed months of real hard work, bringing in its wake alternate successes and disappointments. From the moment he brought the car home there was little rest for all concerned with it, his own energy and enthusiasm being enormous. The engine was hurried into a standard sports chassis and headed for Brooklands in a remarkably short space of time, to be back again for modification almost as quickly. Many dark days followed. Troubles that would have broken the heart of some men followed in what seemed like endless succession. In one day he had six gaskets "blow" before he found the right means and material to withstand the tremendous pressures involved. It does not take much experience to know what this means in terms of work, as the gaskets were all hand made, and the "head," complete with pipe systems, connections, etc., had to come off each time.

This trouble over, and a set of pistons with decidedly ambitious tops having been designed and fitted, he proceeded to lap at what were then remarkable speeds indeed, and in spite of the fact that the very necessary parts frequently fell either in or out of the engine, he never lost faith in it. I remember, towing him home for it seemed the hundredth time, saying with a lack of his optimistic patience: "Let's burn the thing and buy a motor-car!" but his cheery reply was: "Never mind, we're really beginning to go now!" and proceeded to take the motor down prior to an all-night sitting. Coffee and cakes figured at intervals in these "all-night jobs," and I expect the neighbours wondered if he ever slept.

On one occasion he walked into the office of Mr. Weller, the designer of the engine, at the A.C. Works and, laying a mutilated mass of metal down on the desk, exclaimed: "Here you are. How's this for an A.C. con.-rod? How soon can I have another?" One had to be produced, and off down to the track again. He

fitted stiffer valve-springs and reconsidered the "cam contours," with the result that the speed kept creeping up and curious rumours regarding some kind of forced induction floated round the paddock, much to his amusement.

Mr. Weller tells of a very funny incident. When everything had been looking promising, one afternoon Harry, smiling as usual, came into the office and called him down to the yard. "Come and have a look at the engine," he said. "I've got something to show you." And he had. Mr. Weller found the remains of the precious engine strapped to the back of Harry's Rolls-Royce, the body of which he had recently discarded, and in the interval of the fitting of the new body ran it for "use," as he called it.

A gaping hole was in the crank-case of the engine big enough to put a boot in. Harry then produced a tangled remnant which had once done duty as a connecting-rod, saying: "It shot clean across the track! I walked back and found it lying on the grass; it was still warm when I picked it up." It was quite true he found it in the exact spot he shed it, but while the design was almost identical, on close inspection the stamping number proved conclusively that it was not an A.C. rod at all, but some other unfortunate who must have gone round just before. As far as I know, the proper remains were never found.

Even this disaster failed to deter Harry. Although the cross-shaft was smashed and A.C.'s had no spare crank-case available, he very quickly improvised a bracket and remounted the magneto in front of the engine, where, driven by a chain, it operated very well. A patch was welded on the crank-case and the engine was soon running again with as much "pep" as ever.

With the advent of high and sustained speeds the exhaust valves commenced to give trouble. The valve-heads could usually be found reposing on the bottom of the sump, but on one occasion, after a fruitless three-hour search, Harry discovered the valve-head must have gone out through the exhaust-pipe!

Once, as the car was coming off the Byfleet banking on the

track, after a lap or two at speed, unmistakable sounds proclaimed that the "umpteenth" valve-head had broken. It being the day before it was to race at a meeting, it was a very serious matter, but Harry, nothing daunted, mechanically began to tie the rope attaching the A.C. on to the Minerva, saying: "We'll be with them when the flag falls." That his confidence was justified is now a matter of light-car history. The Minerva I have just mentioned was my car, which Harry had had fitted with an enclosed body upholstered in Bedford cord for comfortable winter motoring. It degenerated into a travelling workshop for the A.C., which little car I always followed proudly to Brooklands, complete with tow-rope and spares, and nearly always, less proudly, preceded it home, connected by the rope.

Soon the A.C. started to reach the 90 miles per hour mark, and it was then that the single-seater streamline chassis was made in which Mr. Weller gave great care to questions of weight distribution as well as the elimination of any external details which might cause resistance. To this chassis Harry designed and built in his works his now famous streamlined body, and in his able hands the success of the combination exceeded everyone's expectations from the start, and at its début created a sensation in racing circles.

The car made its first public appearance in its streamlined form at the Easter Meeting of the B.A.R.C., where it caused a great deal of enthusiasm, it being the first really streamlined racing car ever seen at Brooklands. But it was not the first time it had actually been on the track, so although "terrificly fast for a 1½-litre car," as one current motor paper had it, it was handicapped out of any hope of winning either of the races entered, but succeeded in taking second place in both. In the second race he made a very spectacular run through the whole field, with the exception of the limit man who won the race.

After winning the 1,500 cc. Scratch Race at the Junior Car Club Meeting and also the very interesting short sprint of 250 yards against Captain Fraser Nash's famous G.N. named *Mowgli*,

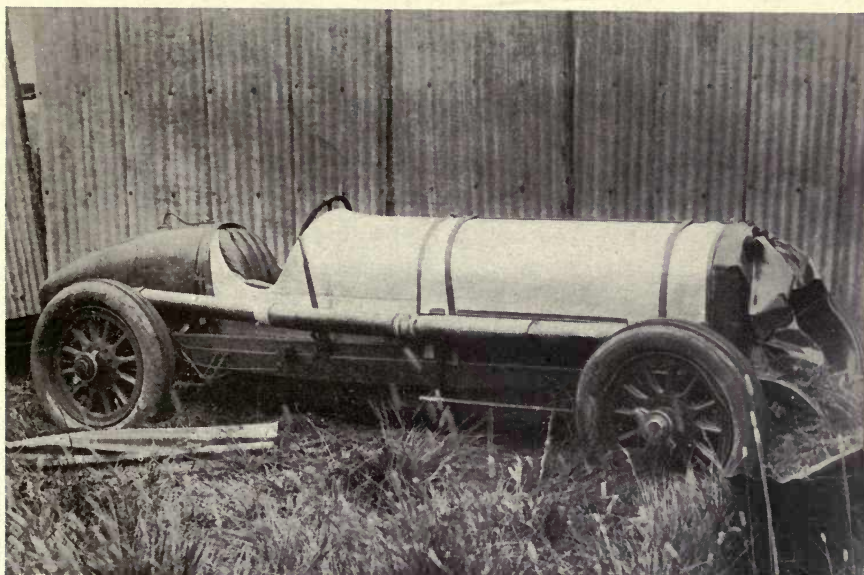


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THE 12-CYLINDER RACING SUNBEAM AFTER HARRY'S SMASH AT BROOKLANDS,
WHEN SEVERAL YARDS OF CORRUGATED IRON FENCING WERE TORN DOWN.

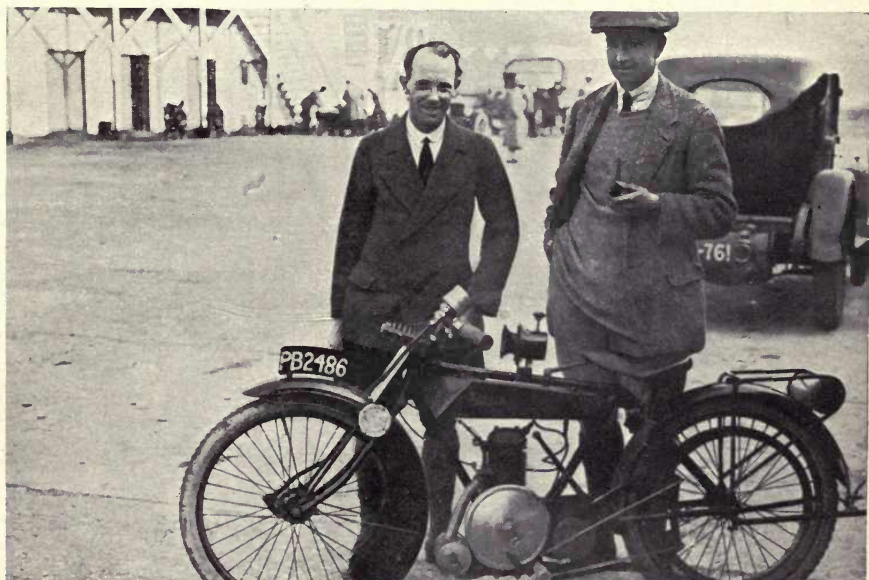


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[Temple Press, Ltd.

MR. T. O. M. SOPWITH, C.E.E., AND HARRY, WITH THE HAWKER TWO-STROKE MOTOR-
CYCLE—A POST-WAR ENTERPRISE OF THE HAWKER ENGINEERING COMPANY.

he began to really "tune up" for records. He was very anxious for his A.C. to be the first 1,500 cc. car to attain 100 miles an hour, and on June 3rd he gained the coveted distinction on his A.C. under official observation. He attacked the flying and standing half-mile records, which stood to the credit of the G.N., and established world's light car records by achieving the speed of 105.15 miles per hour for the flying and 61.43 miles per hour for the standing starts. Those records caused a great sensation in the motor world, and even the lay Press showed some sort of enthusiasm for the latest achievement of the world whose efforts are generally ignored.

Harry received many letters of congratulation from the people interested in the first "100 miles an hour light car," and I think the real sporting atmosphere of Brooklands was conveyed in a genial letter of congratulation from Mr. Lionel Martin, who was not too proud to say he had coveted the distinction for the Aston-Martin car, which I know Harry appreciated very much, as also the hearty grip of Captain Nash who, till then, had swept the board at Brooklands with his G.N., but who now realised he had met his match in the A.C.

In practising for the Midsummer Meeting of the B.A.R.C. on June 25th, he had a very narrow escape from disaster. I was timing his lap speed from the stand, when, as he was about to enter the railway straight at about 100 miles per hour, he suddenly appeared to slide down the banking, and a huge cloud of dust concealed him from view. A man immediately behind me, who had been watching the A.C., exclaimed: "Hawker's off the track! He'll need his luck now!" Running down the steps of the stand, the first person I saw in the paddock was Mr. Coatalen just getting into his car. He took me round to the spot, where, as one would quite expect, Harry was standing up by the side of the track, waving his hands to denote his complete fitness. His appearance, however, was terrible, as his whole face was covered with blood, but, rubbing it with his handkerchief, asked for volunteers to help him out with the car, which could not at first be seen. It had

completely hopped the three-feet concrete parapet that surrounds the track, and was reposing, right way up, in the long grass.

Remonstrances to him to leave the getting up of the machine to the many willing volunteers who had arrived on the scene were of no avail; he hated any sort of fuss, and only left for the paddock when the car was on the track again. It appeared the cause of the accident was the side of the bonnet, over which there was no strap, coming loose and hitting Harry on his forehead, dazing him for the minute. Later, holding out his goggles, complete, but splintered in a thousand pieces and covered with blood, Harry said: "Hang it all, these are my favourite goggles! Just fitted me before; only fit for Triplex display window now!"

We towed the A.C. home, very little damaged considering the jar it must have received in negotiating the parapet, and the whole of that night was spent in taking the body off and looking for any possible trouble. New wheels were substituted for the two completely buckled ones, and Harry raced the car the next day at the B.A.R.C. Meeting, where, unfortunately, engine trouble prevented him winning any races.

After the sprint records he had put up, Harry's intention was to go for sustained and still greater speeds with the object of attacking world's records irrespective of size before the end of the year, but he was only destined to live three more weeks, leaving the car, his loved car on which he had spent so much of his interest and time during the last six months, at the height of its fame, for others to carry on to the 120 miles per hour goal.

During this time, Harry and Sopwith displayed much enthusiasm in their two-stroke motor-cycle production, and they entered and themselves rode machines in many competitions and trials, with a good amount of success.

Harry designed and made in the works a special racing two-stroke cycle, but although he had it out on the road on its maiden trip, he was never to have it out on the track, and after his death the work on this cycle was not continued.

CHAPTER XXI

THE PASSING OF A BRAVE AVIATOR

*"One moment stood he . . . high in the stainless eminence of air.
The next he was not."*

CHAPTER XXI

Harry had elected to pilot a Nieuport Goshawk biplane in the Aerial Derby on Saturday, July 16th, 1921. Another pilot had already attained a speed of 166 miles per hour on this machine, and Harry hoped to maintain British prestige in competition with the principal French champions, or "Aces," who were coming over with machines on which they had exceeded that speed. In short, Harry would get the best possible performance out of the aeroplane.

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"Hawker, Ennadale, Hook Rd., Surbiton.—Machine ready for flying Tuesday afternoon.—FOLLAND."

So reads the telegram which Harry received on Saturday, July 9th, intimating that on the following Tuesday the machine would be ready for him to test.

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Those who closely followed aviation during the late spring and early summer of 1921 will remember that there was a striking coincidence between a spell of exceptionally hot weather and an unusually large number of flying accidents (although not all fatal).

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Exactly what happened or what was the cause will never be known, but it seems probable that something serious, which, Harry realised, might cause a fire, occurred while he was fairly high over Burnt Oak, Hendon; and it was evident that he proceeded to land, but was unable to do so before the machine took fire. As the aeroplane struck the ground the petrol tank

exploded. That Harry died instantaneously there is no doubt, for his body, terribly fractured, was found some 200 yards away.

HARRY GEORGE HAWKER.

AGED 31.

DIED, JULY 12, 1921.

I have said enough ; but let the tributes which more learned judges have paid to the father of my Pamela and Mary be widely known.

"Hawker's one ambition was to get more from an internal combustion engine of given size than anyone else had succeeded in getting, and his perpetual success became a byword. . . . It was in this particular that Hawker shone most brilliantly, and never an engine passed through his hands but it showed an increased power capacity of from 20 per cent. to 100 per cent. when he had finished with it. The same applied to his work in aeroplane and motor-car design. He began where others had left off, and carried what they considered the final stage of development to a point that they had either not dreamed of or had definitely decided to be impossible of achievement. . . . No one but Hawker could have avoided death at the end of that skid. It took place on a car which, originally capable of some sixty miles an hour, regularly accomplished, when he had finished with it, over a hundred."

"If ever there was a trier, Hawker was one. Once he made up his mind to do a thing, he would try, and try, and try again until he succeeded. Failures served to spur him on to new effort. . . . He loved to do things that were worth while, and did them for the sake of doing them, not with any sort of gain in view."

"The nation has lost one of its most distinguished airmen, who by his skill and daring has contributed so much to the success of British aviation."—H.M. KING GEORGE V.



Photo by]

FLORAL TRIBUTES BEING TAKEN TO HARRY'S GRAVE, AT HOOK, SURREY, ON THE
225 H.P. SUNBEAM, BY MY BROTHER, CAPTAIN L. PEATY.

[Daily Sketch.

Picture & 278

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"The nation is the poorer for the loss of one who always displayed such splendid courage and determination. To such pioneers we owed our supremacy of the air during the war."—
RT. HON. D. LLOYD GEORGE.

"No man has done more to further the march of modern practical science than has Mr. Harry Hawker. A man of deeds and few words, his name will go down in the annals of history as a pioneer airman and motorist. The development of the aeroplane as an arm of warfare owes much to his skill and bravery—skill that was not only shown in his handling of experimental machines in the air, but also in the way he applied his remarkable fund of practical technical knowledge to eliminating faults and improving existing designs. His war record as test pilot of Sopwith machines is unmatched. . . . Mr. Harry G. Hawker, A.F.C., will ever be remembered as one to whom the word fear was absolutely unknown."

"Harry Hawker was stamped with genuineness. He was a simple, clean, straight-souled man. He was bred and born to do things. He did them; he did them thoroughly, deep-bitten. He made and left his mark. But in all that he did he worked so simply, so single-mindedly, that in his passing the world of actualities loses not merely a fine airman and a cunning handler of motor-cars."

"The world of aviation has lost a champion; his wife, near relatives and friends have lost something which is quite irreparable, but in our sorrow let us be comforted by the thought that Harry Hawker died as he had lived, doing the work he loved."

THE END

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